[redacted] [redacted]

FILE 'CAPLUS, WPIDS, MEDLINE' ENTERED AT 20:38:12 ON 09 AUG 2002

L1 30765 S (IRON OR FERROUS OR FERRIC) (5A) (GLUCONATE# OR GLUCONIC OR S
L2 326 S L1 AND (DIALYS? OR DIALYZE# OR HEMODIALYS? OR PERITONE? OR IN
L3 280 DUP REM L2 (46 DUPLICATES REMOVED)

=> d que
L1 30765 SEA (IRON OR FERROUS OR FERRIC) (5A) (GLUCONATE# OR GLUCONIC OR SULFATE# OR FUMARATE# OR FUMARIC OR CITRIC OR CITRATE# OR SUCCINIC OR SUCCINATE#)
L2 326 SEA L1 AND (DIALYS? OR DIALYZE# OR HEMODIALYS? OR PERITONE? OR INTRAPERITONEAL OR ESRD OR CAPD)
L3 280 DUP REM L2 (46 DUPLICATES REMOVED)

=> s l3 not hemodialys?
L4 225 L3 NOT HEMODIALYS?

=> s l3 not l4
L5 55 L3 NOT L4

=> d l4 1-225 bib ab

L4 ANSWER 1 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2002:429054 CAPLUS
DN 137:5093
TI Production and purification of bacteriolytic enzyme complex from Xanthomonas campestris
IN Kulaev, Igor Stepanovich; Stepnaia, Olga Andreevna; Zfasman, Irina Matveevna; Tchermenskaya, Taisiya Sergeevna; Ledova, Larisa Aleksandrovna; Zubrizkaja, Ljudmila Grigorevna; Akimenko, Vassily Konstantinovich
PA Institute Biokhimii I Fiziologii Mikroorganizmov Im G.K. Skrjabina Rossiiskoi Akademii Nauk, Russia
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA Russian
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002044352	A1	20020606	WO 2001-RU514	20011128
W: CN, KR, US				
PRAI RU 2000-129650	A	20001129		

AB The invention relates to medicine, veterinary science and biotechnol. and can be used for producing a therapeutic prepn. for medicine and veterinary purposes. The bacteriolytic enzyme complex of the invention is produced by a Xanthomonas campestris XLI (the strain is deposited under no. BKM B-2249 D) and contains bacteriolytic enzymes (muramidase, muramoylalanine amidase, endopeptidase, bacteriolytic enzyme having a mol. mass close to 22 kDa), protease, polysaccharide, and ballast agents. The bacteriolytic enzyme complex is effective against wide spectrum of gram-pos. bacteria. The method of the invention comprises cultivating the strain-producent using a culture medium comprising glucose, peptone, yeast ext. or yeast autolyzate, sodium and potassium phosphates, magnesium **sulfate**, potassium chloride, **iron sulfate** and water.
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2002:409122 CAPLUS
DN 136:406880
TI Sustained release and long residing ophthalmic formulation based on copolymer nanoparticles
IN Maitra, Amarnath; Gupta, Ajay Kumar; Majumdar, Dipak; Madan, Sumit
PA India
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002064513	A1	20020530	US 2001-954722	20010918
GB 2369297	A1	20020529	GB 2001-22506	20010918
DE 10145910	A1	20020620	DE 2001-10145910	20010918
PRAI IN 2000-DE845	A	20000918		
IN 2000-DE871	A	20000926		
IN 2000-DE843	A	20000918		

AB A sustained release and long residing ophthalmic formulation comprises (a) micelle soln. of random block copolymer having a hydrophobic and a

hydrophilic component, and (b) at least one hydrophobic drug particles, e.g., a NSAID drug, of particle size 10-100 nm. Monomer components are selected so to provide (i) hydrogel properties with reduced irritability of the eye, (ii) mucoadhesiveness, and (iii) thermosensitivity of the copolymer. For example, polymeric nanoparticles contg. ketorolac were prepd. Polymeric nanoparticles were obtained by copolymn. of acrylic acid, N-isopropylacrylamide, and vinylpyrrolidone at 30.degree. in nitrogen atm. The copolymer obtained was lyophilized to obtain dry powder. The yield of micelle nanoparticles was >80%. Lyophilized powder (100 mg) was dispersed in 10 mL of water and ketorolac ethanolic soln. (50 mg/mL) was added slowly with const. stirring. Ketorolac got directly loaded into hydrophobic core of polymeric micelles. The drug-loaded polymeric micelles were then lyophilized to get dry powder for subsequent use.

L4 ANSWER 3 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2002:357977 CAPLUS
DN 137:65254
TI Recovery of sulfuric acid from titanium white waste acid by diffusion **dialysis**
AU Zhao, Yi-jiang; Xing, Wei-hong; Xu, Nan-ping
CS Membrane Sci. and Tech. Research Ctr., Key Lab. of Chem. Eng. and Tech. of Jiangsu Province, Nanjing University of Technology, Nanjing, 210009, Peop. Rep. China
SO Gaoxiao Huaxue Gongcheng Xuebao (2002), 16(2), 217-221
CODEN: GHGXEG; ISSN: 1003-9015
PB Zhejiang Daxue
DT Journal
LA Chinese
AB Using diffusion **dialysis** to recover the sulfuric acid from titanium white waste acid was studied. **Dialysis** coeff. of sulfuric acid and **ferrous sulfate** for the anion exchange membrane (DF120) was measured by using simulated system under the static conditions. The effect of operating parameters of dynamic state diffusion **dialysis** on acid recovery rate and acid concn. was investigated. The studied parameters included flow rate of feed, ratio of water to feed, and residence time. The results showed that DF120 membrane used has good sepn. property. **Dialysis** coeff. of sulfuric acid and **ferrous sulfate** are 4.02x10-3 m.h-1 and 1.70x10-4 m.h-1 resp., and the sepn. factor between acid and salt is 23.6. Under the conditions of flow rate ratio of water to waste acid 1.apprx.1.1, feed flow rate 0.6 L.h-1, the acid recovery rate is more than 85%, and the salt leakage rate is less than 7%.

L4 ANSWER 4 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2002:332575 CAPLUS
DN 136:335227
TI Synthetic soil-extract humic acids for herpes viruses inhibition
IN Laub, Richard J.
PA USA
SO U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 345,865.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002051761	A1	20020502	US 2001-974658	20011009
	US 5945446	A	19990831	US 1997-798329	19970210

PRAI US 1997-798329 A3 19970210
US 1999-345865 A2 19990701
US 2000-228694P P 20000829
OS MARPAT 136:335227
AB Phenolic polymers are prepd. by oxidizing and polymg. starting org. compds. comprising at least 1 hydroxyl group and at least 1 carbonyl group or at least 2 hydroxyl groups on an arom. structure. One or more inorg. compds. or salts is added and the soln. is allowed to stand at about 20-80.degree. for at least 2 h. Salt mols. as well as starting compds. and other low mol.-wt. materials below about 500-10,000 daltons are removed from the product soln. Purified phenolic polymers are prepd. in concd. aq. soln. or in dried powder form in a final step if necessary. The resultant phenolic polymers show physicochem. properties strongly resembling those of typical com.-available natural-product soil exts. The materials are active herpes anti-viral agents, and are effective in anti-viral compns. for treating or preventing human herpes viral diseases. Homogentisic acid was dissolved in 0.1N aq. NaOH and the soln. pH was adjusted to 8.5. Sodium periodate and sodium sulfide nonahydrate was added, and the soln. was warmed to 50.degree. overnight. Boric acid, **ferrous sulfate** heptahydrate, and calcium **sulfate** dihydrate were added and the soln. Any ppt. was removed by centrifugation. The soln. was **dialyzed** with a 1,000-dalton cut-off flow-through open-channel or screen membrane system. The **dialysis** app. was then used to conc. the soln. The soln. is freeze-dried to a powder of the synthetic soil ext. The humate materials protect cells against herpes virus infection.

L4 ANSWER 5 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2002:89280 CAPLUS
TI In vitro measurement of available iron in fortified foods
AU Wolfgor, R.; Drago, S. R.; Rodriguez, V.; Pellegrino, N. R.; Valencia, M. E.
CS Department of Nutrition and Food Science, School of Pharmacy and Biochemistry, University of Buenos Aires, Buenos Aires, 1113, Argent.
SO Food Research International (2002), 35(1), 85-90
CODEN: FORIEU; ISSN: 0963-9969
PB Elsevier Science Ltd.
DT Journal
LA English
AB The influence of base systems (0.01 M NaHCO3 or KOH added to 0.01 M HCl) used to regulate digesta pH on iron dialyzability as an indicator of iron bioavailability was examd. The importance of setting titratable acidity to pH 7.5 with KOH to calc. mEq NaHCO3 to be used for pancreatic digestion and **dialysis** was detd. The pH reached using the same mEq of each base was lower when using NaHCO3 vs. KOH. The difference between the reached and attempted pH was not the same for the 3 iron sources (FeSO4, FeCl3, NaFe-EDTA). Differences in pH regulation procedure, including type and concn. of base or buffer added to the pepsin digest led to different final digest/dialyzate pH values, thus affecting the dialyzable iron values. A modification of in vitro equil. **dialysis** method is proposed using PIPES buffer with sufficient molarity to obtain uniform final pH of 6.5 in digest/dialyzate systems. The main factors taken into account to calc. buffer concn. were buffer capacity of food matrix (HCl mEq required to reach pH 2), HCl mEq included in the aliquot of pepsin suspension, acid or base mEq generated through enzymic hydrolysis during in vitro digestion, and food intrinsic pH (HCl mEq to adjust food matrix pH to 6.5). With these data the buffer molarity for each food matrix can be calcd. Modifications suggested for the equil. **dialysis** method allowed development of a uniform final pH of the digest/dialyzate

system in a variety of foods assayed (dry milk, yogurt, corn flakes, bran breakfast cereal).
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2001:407337 CAPLUS
DN 135:251691
TI A randomized study of oral vs. intravenous iron supplementation in patients with progressive renal insufficiency treated with erythropoietin
AU Stoves, John; Inglis, Helen; Newstead, Charles G.
CS Department of Nephrology, St James's University Hospital, Leeds, LS9 7TF, UK
SO Nephrology, Dialysis, Transplantation (2001), 16(5), 967-974
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB Correction of anemia as a result of renal failure improves cardiovascular function and also provides significant cognitive and emotional benefits. The most appropriate route for iron supplementation has not been detd. for patients with chronic renal failure who are not yet on **dialysis**. Forty-five anemic patients with progressive renal insufficiency (PRI) were prospectively randomized to receive oral (**ferrous sulfate** 200 mg tds) or i.v. (300 mg iron sucrose monthly) iron treatment. Erythropoietin (rHuEpo) was simultaneously commenced and the dose adjusted according to a pre-established protocol. There were no significant differences in baseline patient characteristics between the two groups. The av. follow-up was 5.2 mo. Three patients suffered possible allergic reactions to iron sucrose. Hb response and changes in red cell hypochromasia were similar in the two groups, but serum ferritin was significantly higher in the i.v. group. The starting dose of rHuEpo could be temporarily discontinued in 43% of patients on oral iron and 33% of patients receiving iron sucrose (NS). RHuEpo was increased after 3 mo in 9% of patients on oral iron and 19% of patients receiving iron sucrose (NS). Final doses of rHuEpo were 33.5 (0-66) and 41.6 (0-124) U/kg/wk resp. in the oral and i.v. groups (NS). Although gastro-intestinal symptoms were more commonly reported in patients taking oral iron, these were mild according to scores on visual analog scales. Dietary protein and energy intake were not significantly different in the two groups at 0, 3 and 6 mo. In pre-**dialysis** patients, the efficacy of monthly 300 mg iron sucrose given i.v. is not superior with regard to Hb response and rHuEpo dose as compared with a daily oral dose of 600 mg of **ferrous sulfate** or equiv. Where i.v. iron is preferred, lower doses may help to reduce the incidence of allergic or "free iron" reactions, esp. in patients with low body mass.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2001:199313 CAPLUS
DN 135:60551
TI In vitro estimation of the effects of fortifier syrups on iron bioavailability in a typical Brazilian meal
AU Pastor, Rosemeire C. P.; Matsushita, Makoto; Souza, Nilson E.
CS Department of Chemistry, State Univ. of Maringa, Brazil
SO Anais da Associacao Brasileira de Quimica (2000), 49(4), 193-197
CODEN: AABQAL; ISSN: 0365-0073
PB Associacao Brasileira de Quimica

DT Journal
LA English
AB Nine com. restorative syrups were researched with relation to iron content and iron availability in a typical Brazilian com. meal. A typical meal was made up of rice (.apprx.100 g), beans (.apprx.50 g), meat (.apprx.100 g) and tomatoes (.apprx.90 g). Digestion of a plain meal and after addn. of 15 mL of syrup was done in vitro method. The syrups presented pH varying from 1.85 to 4.40, except syrup B (iron saccharate; pH 9.55). The total iron contents of the meal, syrups, meal digested in vitro and meal more syrup digested in vitro were determinated by at. absorption spectrometry against a std. curve of ferric chloride soln. Total iron levels in syrups were 0.272 (C), 0.560 (A), 22.0 (B), 43.3 (H), 46.7 (G), 51.8 (D), 58.3 (E), 115 (I) and 411 (F), in mg/15 mL. The meal (.apprx.340 g) presented a content of 4.32 mg of total iron and 0.159 mg of available iron (3.70%). After the addn. of 15 mL of each syrup to each meal, the concns. of **dialyzed** iron were 0.17 (C), 0.39 (B), 0.54 (A), 0.62 (E), 3.30 (G), 3.87 (F), 4.62 (D), 5.19 (H) and 15.5 (I), in mg/340 g. Only the C syrup did not increase available iron in meal.
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2000:701887 CAPLUS
DN 133:271764
TI Composition for **dialysis** and shock treatment
IN Stone, Andrew
PA USA
SO U.S., 8 pp., Cont.-in-part of U.S. 5,755,968.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6126832	A	20001003	US 1997-961658	19971031
	US 5620604	A	19970415	US 1994-225894	19940411
	US 5755968	A	19980526	US 1997-797695	19970131
	WO 9833535	A1	19980806	WO 1997-US19768	19971031
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9850977	A1	19980825	AU 1998-50977	19971031
	AU 724742	B2	20000928		
	EP 973563	A1	20000126	EP 1997-913912	19971031
	R: CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, IE, FI				
	JP 2001509712	T2	20010724	JP 1998-532855	19971031
	CA 2307560	AA	19990514	CA 1998-2307560	19981030
	WO 9922609	A1	19990514	WO 1998-US23085	19981030
	W: AU, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9913702	A1	19990524	AU 1999-13702	19981030
	AU 740332	B2	20011101		
	EP 1030567	A1	20000830	EP 1998-957443	19981030
	R: CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, IE, FI				
	JP 2001521767	T2	20011113	JP 2000-518564	19981030
PRAI	US 1992-922673	B2	19920730		
	US 1994-225894	A2	19940411		
	US 1997-797695	A2	19970131		
	US 1997-961658	A	19971031		

WO 1997-US19768 W 19971031
WO 1998-US23085 W 19981030

AB A **dialysis** system and method for removing toxic matter from the large intestine comprises an input tube, an output tube concentric with the input tube, both of which tubes are to be inserted in the large intestine an input pressure pump connected to deliver filtrate soln. from an input container to the input tube, and an output suction pump connected to the output tube to remove filtrate soln. Pressure gauges control the input and output pumps so that an input pressure level of 75 mm Hg is not exceeded, and so that the output suction pump is disabled unless the input pressure level exceeds 45 mm Hg. A filtrate soln. compn. comprising a vasodilator of niacin, a high mol. wt. protein in the form of casein, a mineral constituents and other components is also provided. The compn. may be formed of electrolytes, buffers and a high mol. wt. osmotic agent. The system and method may be adapted to treat shock. A shock treatment compn. may comprise electrolytes, buffers and a rehydrating agent.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2000:442103 CAPLUS
DN 133:45669
TI Preparation of nanoscale agglomerate-free maghemite suspensions
IN Nonninger, Ralf; Jost, Martin
PA Bayer A.-G., Germany; Institut Fuer Neue Materialien Gemeinnuetzige Gmbh
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19859687	A1	20000629	DE 1998-19859687	19981223

AB Nanoscale agglomerate-free maghemite (Fe2O3) suspensions are prepd. from an aq. soln. contg. FeSO4 and Fe2(SO4)3 in deionized O-free water (with molar ratio Fe2+:Fe3+ of 1:2, and Fe ion concn. 0.1-1.1 mol/L) by addn. of NaOH (to molar ratio NaOH:Fe ion of 2.7-3), followed by washing of the ppt., adjustment of the pH to 0.5-3, air oxidn. at 60-100.degree.C, and residual salt removal by **dialysis**.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2000:326184 CAPLUS
DN 133:104083
TI Effect of proteins, phytates, ascorbic acid and **citric** acid on **dialysability** of calcium, **iron**, zinc and copper in soy-based infant formulas
AU Jovani, M.; Alegria, A.; Barbera, R.; Farre, R.; Lagarda, M. J.; Clemente, G.
CS Faculty of Pharmacy, Department of Nutrition and Food Chemistry, University of Valencia, Burjassot, Spain
SO Nahrung (2000), 44(2), 114-117
CODEN: NAHRAR; ISSN: 0027-769X
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB The possible effect of ascorbic acid, citric acid, proteins and phytate on **dialysability** of Ca, Fe, Zn and Cu in soy-based infant formulas is

[redacted] [redacted]

studied, taking **dialysability** as a measure of the amt. of element available for absorption. Different **dialysis** percentages for similar element contents in different formulas are found. A regression anal. was applied between Ca, Zn, Cu and Fe **dialysis** percentages and soy-based formula components to est. the possible influence of the latter on the **dialysability** of the elements. Significant correlations were found between citric acid contents and **dialysability** of Zn and Fe. No correlations were found between protein, ascorbic acid and phytic acid contents and the **dialysis** percentages of the four minerals. However, we must to point out that the range of protein contents was narrow and the ascorbic acid: iron ratio was high in our formulas.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 2000:109496 CAPLUS
DN 133:22307
TI Influence of **ferrous sulfate** on the protein binding of diltiazem in vitro
AU Amran, Md. Shah; Hossain, Md. Amjad
CS Department of Pharmacy, Dhaka University, Dhaka, 1000, Bangladesh
SO Journal of Bangladesh Academy of Sciences (1999), 23(2), 125-131
CODEN: JBACDF; ISSN: 0378-8121
PB Bangladesh Academy of Sciences
DT Journal
LA English
AB An in vitro study of protein (Bovine Serum Albumin) binding of diltiazem hydrochloride and its 1:1 M mixts. with **ferrous sulfate** has been conducted by equil. **dialysis** method using direct spectrophotometry at 37 .+-. 0.5.degree.C and pH 7.4. **Ferrous sulfate** greatly lowered the affinity and percentage of protein binding of diltiazem hydrochloride. The highest value of free diltiazem binding was 91% and in the combined system the highest value was 53%.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:671448 CAPLUS
DN 132:161196
TI Oral phosphate binders: phosphate binding capacity of iron (III) hydroxide complexes containing saccharides and their effect on the urinary excretion of calcium and phosphate in rats
AU Yamaguchi, Tatsuaki; Baxter, Joseph G.; Maebashi, Naoki; Asano, Tomohiko
CS Laboratory of Organic Chemistry, Chiba Institute of Technology, Narashino, 275, Japan
SO Renal Failure (1999), 21(5), 453-468
CODEN: REFAE8; ISSN: 0886-022X
PB Marcel Dekker, Inc.
DT Journal
LA English
AB Phosphate binders that contain aluminum or calcium are frequently prescribed to treat hyperphosphatemia in patients with end-stage renal disease (**ESRD**), but an accumulation of aluminum can lead to encephalopathy, aluminum related bone disease (ARBD) such as osteomalacia, anemia, and resistance to erythropoietin, and calcium accumulation can lead to hypercalcemia. High phosphate concns. are reduced in vitro and in vivo by a phosphate adsorption pill, which is synthesized by hydrolyzing **ferrous sulfate** in the presence of saccharides, to form

on iron (III)-saccharide complex that is acid resistant and binds phosphate greater than iron (III) hydroxide alone. Under in vitro conditions, contg. 3.26 mg P/dL, the iron (III)-sucrose complex showed the highest phosphate adsorption capacity at pH 2 with artificial gastric juice, 58.9 mg P/g binder. For the 7 day in vivo study, 0% (Group 1), 1% (Group 2), 4% (Group 3), and 8% (Group 4) iron (III)-sucrose complex was admixed into the rodent chow by wt. and fed to 15 male Wistar rats. The wt. and vol. of the feces and urine, and the calcium, iron, and phosphorus excretions in the feces and urine samples were monitored for any signs of irregularity. Total urine outflow was collected during a 24-h period to det. the amt. of phosphate recovered, which indicates the ability of the phosphate binder to reduce gastrointestinal phosphate absorption. The fecal iron excretion was significantly effected by the amt. of binder ingested throughout the study for Group 2 ($p < 0.001$), Group 3 ($p < 0.01$), and Group 4 ($p < 0.001$). The urinary calcium excretion (mg/rat/24-h) significantly increased by the 7th day for Group 2 ($p < 0.05$) and Group 4 ($p < 0.01$) in comparison to the control. Finally, after 7 days, there was a significant drop in the urinary phosphorus levels (mg P/rat/24-h) in a dose dependant manner for Group 2: from 7.82 .+-. 1.46 to 1.98 .+-. 0.10 mg P/rat/24-h (102 mg P/dL/24-h; $p < 0.05$); Group 3: from 6.70 .+-. 1.14 to 0.16 .+-. 0.09 mg P/rat/24-h (6.0 mg P/dL/24-h; $p < 0.01$); and Group 4: from 8.25 .+-. 0.67 to 0.04 .+-. 0.01 mg P/rat/24-h (0.9 mg P/dL/24-h; $p < 0.01$). The results show that this new adsorbent might provide an alternative to conventional aluminum and calcium contg. phosphate-binding agents for combating hyperphosphatemia.

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:667121 CAPLUS
DN 131:348913
TI Ferric iron reduction by bacteria associated with the roots of freshwater and marine macrophytes
AU King, G. M.; Garey, Meredith A.
CS Darling Marine Center, University of Maine, Walpole, ME, 04573, USA
SO Applied and Environmental Microbiology (1999), 65(10), 4393-4398
CODEN: AEMIDF; ISSN: 0099-2240
PB American Society for Microbiology
DT Journal
LA English
AB In vitro assays of washed, excised roots revealed max. potential ferric iron redn. rates of > 100 .mu.mol g (dry wt.)-1 day-1 for three freshwater macrophytes and rates between 15 and 83 .mu.mol (dry wt.)-1 day-1 for two marine species. The rates varied with root morphol. but not consistently (fine root activity exceeded smooth root activity in some but not all cases). Sodium molybdate added at final concns. of 0.2 to 20 mM did not inhibit iron redn. by roots of marine macrophytes (Spartina alterniflora and Zostera marina). Roots of a freshwater macrophyte, Sparganium eurycarpum, that were incubated with an analog of humic acid precursors, anthraquinone disulfate (AQDS), reduced freshly pptd. iron oxyhydroxide contained in **dialysis** bags that excluded solutes with mol. wts. of >1,000; no redn. occurred in the absence of AQDS. Bacterial enrichment cultures and isolates from freshwater and marine roots used a variety of carbon and energy sources (e.g., acetate, ethanol, **succinate**, toluene, and yeast ext.) and **ferric** oxyhydroxide, **ferric citrate**, uranate, and AQDS as terminal electron acceptors. The temp. optima for a freshwater isolate and a marine isolate were equiv. (approx. 32.degree.C). However, iron redn. by the freshwater isolate decreased with increasing salinity, while redn. by the marine isolate

displayed a relatively broad optimum salinity between 20 and 35 ppt. Our results suggest that by participating in an active iron cycle and perhaps by reducing humic acids, iron reducers in the rhizoplane of aquatic macrophytes limit org. availability to other heterotrophs (including methanogens) in the rhizosphere and bulk sediments.
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:649930 CAPLUS
DN 131:325295
TI Transient redox regimes in a shallow alluvial aquifer
AU Groffman, A. R.; Crossey, L. J.
CS Northrup Hall, Department of Earth and Planetary Sciences, University of New Mexico, Albuquerque, NM, USA
SO Chemical Geology (1999), 161(4), 415-442
CODEN: CHGEAD; ISSN: 0009-2541
PB Elsevier Science B.V.
DT Journal
LA English
AB Using **dialysis** cells, sediment anal. and systematic ground water sampling we are investigating transient redox gradients in a shallow aquifer at the Rio Calaveras research site located in the Jemez Mountains of northern New Mexico. Hydrochem. data show that the dominant redox potentials shift spatially and temporally from O2/H2O2 during spring to a Fe3+/Fe2+, Mn4+/Mn2+ and SO42-/HS- system with the onset of summer. In autumn, both **iron** and **sulfate** redn. processes are more pronounced in the upper meter of the water table a condition that persists until spring snow melt infiltration. Infiltration of spring snow melt transports dissolved oxygen to the top of the aquifer where it reacts with Fe2+ and HS- and shifts the redox potentials from moderately reducing to moderately oxidizing in the upper regions of the aquifer. Redox is strongly controlled by inputs of org. carbon, the primary reductant in the system. Low mol. wt. org. acids (acetate, formate, propionate and oxalate) are vertically zoned with a greater abundance in the upper meter of the aquifer. Org. acids, derived from org.-rich sediments in the aquifer, are transported from the overlying vadose zone reservoir providing a substrate for heterotrophic bacteria that reduce the terminal electron acceptors (TEAs) O2, MnO2(s), Fe(OH)3(s) and SO42-. We postulate that two central mechanisms are primarily responsible for transient redox gradients during an annual cycle: (1) bacterially mediated redn. of manganese, **iron** and **sulfate** shifts redox to moderately reducing conditions during autumn and (2) transport of mol. oxygen to the top of the water table during infiltration events oxidizes Fe2+ and HS- diminishing their concns. and shifting redox towards more oxidizing conditions.
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:647373 CAPLUS
DN 131:322005
TI Formation and properties of hydroxy **iron**(III) oligomer-**citrate** complex
AU Wada, Shin-Ichiro; Ryu, Takashi
CS Division of Bioresources and Environmental Sciences, Graduate School of Kyushu University, Fukuoka, 812-8581, Japan
SO Soil Science and Plant Nutrition (Tokyo) (1999), 45(3), 725-728
CODEN: SSPNAW; ISSN: 0038-0768

PB Japanese Society of Soil Science and Plant Nutrition
DT Journal
LA English
AB Instantaneous neutralization of Fe(III) chloride dissolved in Na citrate by powdery NaHCO3 gave stable clear brown sols. The sol particles sepd. by **dialysis** and freeze-drying showed a single diffraction peak at 2 nm and a citrate/Fe molar ratio of about 0.2 irresp. of the compn. of the starting solns. This indicates that the product may be a novel phase of Fe(III) citrate.
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:311068 CAPLUS
DN 130:329216
TI System, method and composition for **dialysis** and shock treatment
IN Stone, Andrew
PA USA
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9922609	A1	19990514	WO 1998-US23085	19981030
	W: AU, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6126832	A	20001003	US 1997-961658	19971031
	CA 2307560	AA	19990514	CA 1998-2307560	19981030
	AU 9913702	A1	19990524	AU 1999-13702	19981030
	AU 740332	B2	20011101		
	EP 1030567	A1	20000830	EP 1998-957443	19981030
	R: CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, IE, FI				
	JP 2001521767	T2	20011113	JP 2000-518564	19981030
PRAI	US 1997-961658	A	19971031		
	US 1992-922673	B2	19920730		
	US 1994-225894	A2	19940411		
	US 1997-797695	A2	19970131		
	WO 1998-US23085	W	19981030		

AB A **dialysis** system and method for removing toxic matter from the large intestine includes an input tube, an output tube concentric with the input tube, both of which tubes are to be inserted in the large intestine, an input pressure pump connected to the input tube to deliver filtrate soln. from an input container and an output suction pump connected to the output tube to remove filtrate soln. Pressure gauges control the input and output pumps. A filtrate soln. compn. includes a vasodilator of niacin, a high mol. wt. protein in the form of casein, mineral constituents and other components. The system and method may be adapted to treat shock. A shock treatment compn. may comprise electrolytes, buffers and a rehydrating agent.
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1999:83901 CAPLUS
DN 130:211367
TI New approach for acid recovery

AU Olsen, Douglas R.; Blumenschein, Charles D.
CS Green Technology Group, Pawling, NY, USA
SO Iron and Steel Engineer (1999), 76(1), 46-50
CODEN: IRSEA5; ISSN: 0021-1559
PB Association of Iron and Steel Engineers
DT Journal
LA English
AB A new technol. combines diffusion **dialysis**, energy transfer and low-temp. crystn. to recover acids for use in pickling operations together with the continuous maintenance of optimal acid concns. Typically, the system produces a high-quality byproduct of **ferrous sulfate** salt suitable for sale. Actual operations of the pickling process demonstrate that optimal pickling bath acid concns. are continuously maintained. The process allows throughput to be maximized with the elimination of acid waste. Significant productivity increases in pickling operations and waste minimization have been demonstrated. Two full-scale sulfuric acid systems are in operation.
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1998:749778 CAPLUS
DN 130:66855
TI Surfactant-free emulsion polymerization of chlorotrifluoroethylene with vinyl acetate or vinylidene fluoride
AU McCarthy, T. F.; Williams, R.; Bitay, J. F.; Zero, K.; Yang, M. S.; Mares, F.
CS Allied Signal Corporation, Morristown, NJ, 07962, USA
SO Journal of Applied Polymer Science (1998), 70(11), 2211-2225
CODEN: JAPNAB; ISSN: 0021-8995
PB John Wiley & Sons, Inc.
DT Journal
LA English
AB A surfactant-free emulsion process was developed for the prepn. of copolymers of chlorotrifluoroethylene with vinyl acetate or vinylidene fluoride. A redox initiator system, consisting of Na2S2O5, t-BuOOH, and FeSO4, was effective in prepg. self-emulsifying fluoropolymers with monodisperse particle size distribution and having .ltoreq.45% polymer solids in water. Over the range studied in this investigation, the particle no. and the ultimate particle size is linearly related to the quantity of initially charged redox catalyst. Under conditions of optimal catalyst concns., a greater no. of particles is produced in the surfactant-free process than that which can be obtained using conventional fluorosurfactants. Particle no. is defined at the earliest stage of polymn. and remains const. throughout the polymn., unless surfactant is postadded to the surfactant-free latex at a very early stage. The aq. phases of various latexes were purified by ion-exchange and **dialysis**, enabling the sulfonic acid-terminated fluoropolymer end groups to be quantified. The highest level of bound sulfonic acid is obtained at elevated temps.
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 19 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1997:197966 CAPLUS
DN 126:327912
TI Phosphatidylethanolamine production and iron homeostasis in Pseudomonas fluorescens
AU Appanna, Vasu D.; Hamel, Robert

CS Department Chemistry Biochemistry, Laurentian University, Sudbury, ON, P3E 2C6, Can.
SO Microbiological Research (1997), 152(1), 99-103
CODEN: MCRSEJ; ISSN: 0944-5013
PB Fischer
DT Journal
LA English
AB Pseudomonas fluorescens was found to grow in a min. mineral medium contg. citrate as the sole C source complexed to 5 mM Fe(III). As the tricarboxylic acid was utilized, **dialysis** and ultracentrifugation anal. of the spent fluid revealed that Fe(III) was assocd. with phosphatidylethanolamine (PE). At. absorption studies revealed that the Fe concn. in the sol. cellular fraction was max. at 35 h of incubation and accounted for 1.3% of the total Fe. However, at the stationary phase of growth, most of the Fe was deposited as a PE-contg. residue. A transmission electron microscope, equipped with an electron energy loss spectrometer (EELS), allowed the visualization of Fe bodies within the bacterial cells. However, such metal inclusions were absent in cells isolated at the stationary phase of growth.

L4 ANSWER 20 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1997:104405 CAPLUS
DN 126:108312
TI Wastewater treatment for selenium(VI) ion removal by reduction and flocculation
IN Ogose, Tsutomu; Oda, Nobuhiro
PA Kurita Water Ind Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08309369	A2	19961126	JP 1995-142753	19950517

AB Treatment of wastewater contg. Se6+ ion is carried out by (1) adding a reducing agent to wastewater contg. Se6+ ion, (2) reducing Se6+ ion at pH .ltoreq.2 and 60-100.degree., (3) carrying out **dialysis** by feeding the resulting wastewater to one side of a **dialysis** membrane and feeding wastewater contg. Se6+ ion before treatment to the other side of the membrane, and (4) flocculating the reduced and **dialyzed** wastewater at pH 6-10. Se6+ ion is completely reduced to Se with small amts. of an acid and an alk. neutralizing agent.

L4 ANSWER 21 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:709604 CAPLUS
DN 126:3364
TI Comparative binding studies of zinc and iron to human serum transferrin
AU Moshtaghie, A. A.; Badii, A.
CS Department Biochemistry, School Pharmacy, Isfahan Univ. Medical Sciences, Esfahan, Iran
SO Iranian Journal of Science and Technology (1996), 20(2), 177-188
CODEN: IJSTBT; ISSN: 0360-1307
PB Shiraz University Press
DT Journal
LA English
AB The characteristics of zinc (Zn) and iron (Fe) bindings to human apo-transferrin (apo-tf) have been investigated and compared. Although binding of **iron** as a complex with **citric** acid (1:20)

to apo-tf showed a max. wavelength at 465 nm in Earle's medium pH 7.4, no visible spectrum for zinc binding to apo-tf was obsd. The binding of iron to apo-tf at 465 nm was reduced by 40% when 50.mu.g/l of zinc was added to the reaction mixt. Fluorometric titrn. of apo-tf with zinc showed max. excitation and emission of 310 and 330 nm, resp. Approx. 50% redn. in the fluorescence of apo-tf was seen when it was titrated with zinc (200 .mu.g/l) as ZnCl2. Using equil. **dialysis** technique, the binding of iron to apo-tf was also studied. The addn. of zinc 150 .mu.g/100 mL as ZnCl2 to outside the **dialysis** sac reduced iron uptake by 30%. The binding const. of zinc to apo-tf was calcd. using Scatchard plot anal. and it was 0.88 x 106 M-1. Lysine and arginine might be the most suitable amino acid ligands for zinc binding to apo-tf. The binding of zinc and iron to human apo-tf has been discussed and compared here, using different biochem. techniques.

L4 ANSWER 22 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:616585 CAPLUS
DN 125:296670
TI Process for detecting oxidized lipids and process for forming oxidized lipids
IN Koike, Katsumasa
PA Koike; Katsumasa, Japan
SO U.S., 21 pp., Cont.-in-part of U. S. Ser. No. 77,076, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5561052	A	19961001	US 1995-446082	19950519
	JP 06003297	A2	19940111	JP 1992-200082	19920618
	JP 3262846	B2	20020304		
	JP 06324132	A2	19941125	JP 1993-144170	19930512
	JP 2920044	B2	19990719		
PRAI	JP 1992-200082	A	19920618		
	JP 1993-144170	A	19930512		
	US 1993-77076	B2	19930616		

AB Disclosed are a process for detecting and detg. an oxidized lipid in a specimen that can readily and accurately det. a specimen as contg. an oxidized lipid and a process for forming a water-sol. oxidized lipid having a hydroperoxide group which has specific influence on a living body. A specimen is detected and detd. to contain an oxidized lipid by adding a lanthanide shift reagent to a specimen, followed by spectroscopic anal. thereof. An oxidized lipid is formed by adding superoxide dismutase (SOD) and CuSO4 to (1) an emulsion prepd. by dissolving linoleic acid or arachidonic acid in deuterated Me alc. and adding the soln. to a deuterated phosphate buffer under stirring or to (2) a low-d. lipoprotein soln. sufficiently **dialyzed** against an undeuterated phosphate buffer, followed by irradn. with long-wavelength UV light.

L4 ANSWER 23 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:390628 CAPLUS
DN 125:52195
TI Interaction of ferric complexes with NADH-cytochrome b5 reductase and cytochrome b5: lipid peroxidation, H2O2 generation, and ferric reduction
AU Yang, Ming-Xue; Cedarbaum, Arthur I.
CS Dep. of Biochemistry, Mount Sinai School of Medicine, New York, NY, 10029, USA
SO Archives of Biochemistry and Biophysics (1996), 331(1), 69-78

CODEN: ABBIA4; ISSN: 0003-9861
PB Academic
DT Journal
LA English
AB NADH is reactive in interacting with Fe and liver microsomes to catalyze the formation of reactive O species. NADH-dependent microsomal electron transfer involves NADH-cytochrome b5 reductase (I) and cytochrome b5 (II). Expts. were carried out to evaluate the ability of reconstituted systems contg. purified I in the absence or presence of II to reduce several Fe3+ complexes, to generate H2O2, and to catalyze lipid peroxidn. I directly reduced Fe3+-EDTA; the addn. of II inhibited this redn. probably due to competition for I. II was required for the redn. of low (5 .mu.M) and high (50 .mu.M) concns. of Fe3+-histidine and **ferric** ammonium **sulfate** and low concns. of Fe3+-ATP. I could interact directly with high (50 .mu.M) concns. of Fe3+-ATP. Peroxidn. of phospholipids extd. from liver microsomes by I required II. Molar ratios of II:I approximateing those found in liver microsomes (e.g., 10) were effective in catalyzing lipid peroxidn. and Fe3+ redn. The role of II in catalyzing lipid peroxidn. appeared to involve redn. of the Fe3+ catalyst to help form an initiation complex and degrdn. of lipid hydroperoxides by the hemoprotein to catalyze propagation of the peroxidn. cycle. In contrast to results with microsomes, lipid peroxidn. by the complete reconstituted system was sensitive to superoxide dismutase; this sensitivity was decreased if the reconstituted system was **dialyzed** overnight to form vesicular prepns., indicating that accessibility of enzymes to sites of peroxidn. was important. High rates of H2O2 formation were obsd. in the presence of Fe3+-EDTA plus I; rates of H2O2 formation with the other Fe3+ complexes were low even in the presence of II. These results indicated that the ability of I and II to interact with various Fe3+ complexes depends on the nature of the chelating agent used to complex the Fe and on the concn. of the Fe.

L4 ANSWER 24 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:266990 CAPLUS
DN 124:341611
TI Assessment of iron availability using combined in vitro digestion and Caco-2 cell culture
AU Gangloff, Mary Beth; Glahn, Raymond P.; Miller, Dennis D.; Van Campen, Darrell R.
CS Department of Food Science, Cornell University, Ithaca, NY, USA
SO Nutr. Res. (N. Y.) (1996), 16(3), 479-87
CODEN: NTRSDC; ISSN: 0271-5317
DT Journal
LA English
AB A model for the rapid assessment of iron availability was developed that combines in vitro digestion with iron uptake by Caco-2 cell monolayers. In this method, samples (beef, ascorbic acid, or citric acid) were adjusted to pH 2, labeled with 59Fe, and subjected to pepsin digestion (pH 2, 37.degree.C) for 1 h to simulate gastric digestion. Next, a **dialysis** bag (12,000-14,000 mol. wt. cutoff) contg. 150 mM PIPES buffer (pH 6.7) was placed in the digest and incubation continued for 30 min. Then, a pancreatin-bile mixt. was added, and incubation was continued for an addnl. 2 h. The contents of the **dialysis** bag were removed and an aliquot applied to Caco-2 cell monolayers. After a 60 min incubation, iron that was non-specifically bound to the surface of the monolayer was removed by rinsing with a soln. contg. bathophenanthrolinedisulfonic acid and sodium dithionite. Cells were then counted for 59Fe activity to measure uptake. Beef and ascorbic acid enhanced Caco-2 cell **iron** uptake, whereas **citric** acid

had no effect. These results compare favorably with literature reports of human studies and suggest that a dialyzable factor(s) less than 14,000 daltons, released during beef digestion, was responsible for the iron absorption-enhancing properties of beef. We believe that this system will be useful for studying basic mechanisms of iron absorption and for in vitro estn. of iron bioavailability.

L4 ANSWER 25 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:200176 CAPLUS
DN 124:242318
TI Iron-containing nanoparticles as diagnostic contrast agents and carriers for drugs
IN Kresse, Mayk; Pfefferer, Detlev; Lawaczek, Ruediger; Wagner, Susanne; Ebert, Wolfgang; Elste, Volker; Semmler, Wolfhard; Taupitz, Matthias; Gaida, Josef; et al.
PA Institut Fuer Diagnostikforschung Gmbh An Der Freien Universitaet Berlin, Germany
SO Ger. Offen., 66 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4428851	A1	19960208	DE 1994-4428851	19940804
	DE 4428851	C2	20000504		
	CA 2195318	AA	19960215	CA 1995-2195318	19950710
	WO 9604017	A1	19960215	WO 1995-DE924	19950710
	W: AU, CA, CN, HU, JP, KR, NO, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9529210	A1	19960304	AU 1995-29210	19950710
	AU 703042	B2	19990311		
	EP 773796	A1	19970521	EP 1995-924859	19950710
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	CN 1155844	A	19970730	CN 1995-194525	19950710
	JP 10503496	T2	19980331	JP 1995-506079	19950710
	HU 77993	A2	19990428	HU 1997-350	19950710
	ZA 9506005	A	19960222	ZA 1995-6005	19950719
	IL 114713	A1	20000217	IL 1995-114713	19950724
	IL 131562	A1	20000831	IL 1995-131562	19950724
	NO 9700468	A	19970402	NO 1997-468	19970203
PRAI	DE 1994-4428851	A	19940804		
	WO 1995-DE924	W	19950710		
	IL 1995-114713	A3	19950724		

AB Nanoparticles with an Fe-contg. core surrounded by a primary coating of synthetic polymer and an outer polymer coating for targeting the particles to specific tissues. The Fe-contg. cores are prepd. by mixing stoichiometric amts. of Fe2+ and Fe3+ salts in the presence of the synthetic polymer and raising the pH to convert the Fe salts to oxides, resulting in their pptn. The synthetic polymer is incorporated into the particles and acts as stabilizer, allowing formation of a stable suspension or sol. Application of the outer coat may be facilitated by use of an adsorption enhancer. The targeting polymer may be a biopolymer, oligo- or polysaccharide, lectin, receptor, etc., to which a chemotherapeutic agent may be conjugated. Thus, 648 mg FeCl2.4H2O was added to 6.7 mL degassed 1M FeCl3.6H2O under N2, a soln. of 5.0 g monocarboxydextran (mol. wt. 2000) in 17.5 mL distd. H2O at 75.degree. was added under N2, and the mixt. was alkalized with NH3, refluxed for 1 h, boiled for 10 min, cooled, centrifuged, and the supernatant was concd. to

.apprx.1M in Fe, autoclaved, **dialyzed**, and coated with human transferrin for visualization of proliferating tumor cells after receptor-mediated endocytosis.

L4 ANSWER 26 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:118156 CAPLUS
DN 124:219851
TI Sodium **ferrous citrate** does not cause aluminum retention in rats with experimentally induced renal failure
AU Yamazaki, Kazuto; Kajima, Takashi; Yoshida, Yutaka; Yuzuriha, Teruaki; Wakabayashi, Tsuneo; Shigematsu, Takashi; Yamamoto, Hiroyasu; Kawaguchi, Yoshindo
CS Tsukuba Research Laboratories, Eisai Co., Ltd., Tsukuba, 300-26, Japan
SO J. Bone Miner. Metab. (1995), Volume Date 1995, 13(2), 87-92
CODEN: JBMME4; ISSN: 0914-8779
DT Journal
LA English
AB Accumulation of aluminum (Al) in the brain and bone has been implicated in the development of encephalopathy and osteodystrophy in patients with renal failure, and it has been reported that citric acid enhances Al absorption and retention. Oral iron supplementation is usually carried out with recombinant human erythropoietin (rHuEPO) therapy in end-stage renal disease (**ESRD**) patients. Accordingly, there is a possibility that Ferromia (sodium **ferrous citrate**, tetrasodium biscitrato **iron** (II), E0708), which is used for the treatment of iron deficiency anemia, might accelerate Al absorption and retention. To investigate this possibility, the authors administered oral aluminum hydroxide [Al(OH)3] [50 mg Al/kg body wt. (BW)] with or without E0708 (48 mg/kg BW or 480 mg/kg BW) to 5/6-nephrectomized rats five times per wk for 16 wk, and detd. the Al content of the serum, liver, cerebral cortex, and femoral bone by flameless at. absorption spectroscopy. The low dose of E0708 corresponded approx. to the clin. dose, and its low and high doses contained 34.5 mg/kg BW and 345.0 mg/kg BW, resp., of citric acid. In addn., the authors gave 5/6-nephrectomized rats Al(OH)3 with citric acid at 35 mg/kg BW, which was identical to the citric acid dose of the low-dose regimen of E0708. The wt. gain, serum urea nitrogen, and creatinine levels indicated that the rats developed mild to moderate renal failure. There was no significant increase of the Al content in the serum or organs of the Al(OH)3 + E0708-treated rats when compared with the Al(OH)3-treated rats and Al(OH)3 + citric acid-treated rats. These findings suggest that the usual clin. dose of E0708 does not promote Al retention in rats with mild to moderate renal failure or normal rats.

L4 ANSWER 27 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1996:29346 CAPLUS
DN 124:169744
TI Spin trapping isotopically-labeled nitric oxide produced from [15N]L-arginine and [17O]dioxygen by activated macrophages using a water soluble Fe++-dithiocarbamate spin trap
AU Kotake, Yashige; Tanigawa, Toru; Tanigawa, Mari; Ueno, Ikuko
CS Free Radical Biology and Aging Research Program, Oklahoma Medical Research Foundation, Oklahoma City, OK, 73104, USA
SO Free Radical Res. (1995), 23(3), 287-95
CODEN: FRARER; ISSN: 1071-5762
DT Journal
LA English
AB The unique capabilities of EPR spin trapping of nitric oxide based on a ferrous-dithiocarbamate spin trap have been demonstrated in a study verifying the source of the nitrogen and oxygen atoms in nitric oxide

produced from activated macrophages. Spin trapping expts. were performed during nitric oxide generation from activated mouse **peritoneal** macrophages using the ferrous complex of N-methyl-D-glucamine dithiocarbamate as a spin trap. When 15N-substituted arginine was given to the activated macrophages in the presence of the spin trap, a characteristic EPR spectrum of the nitric oxide spin adduct was obtained, which indicates the presence of the 15N atom in the nitric oxide mol. The hyperfine splitting (hfs) const. of the 15N nucleus was 17.6 G. When 17O-contg. dioxygen (55%) was supplied to the medium, an EPR spectrum of the 17O-substituted nitric oxide spin adduct was obsd. in the composite spectrum. The hfs of 17O was estd. to be 2.5 G. The 14NO spin adduct obsd. after prolonged incubation in the medium which contains [15N]L-arginine as the only extracellular source of arginine demonstrates that arginine is recycled through its metabolite in activated macrophages.

L4 ANSWER 28 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:938565 CAPLUS
DN 123:330025
TI Hyperphosphoremia inhibitors containing **ferrous citrate**
IN Kuroda, Shigeomi
PA Kuroda Shigeomi, Japan; Eisai Co Ltd
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07233063	A2	19950905	JP 1993-93927	19930330

AB Claimed are prophylactic and therapeutic agents for hyperphosphoremia contg. **ferrous citrate** or its pharmacol. acceptable salts. The agents are useful for control of P in patients with renal failure. Ferromia (tablet contg. 470.9 mg Na **ferrous citrate**) was administered to patients undergoing long-term **dialysis** 3 time a day after meal to lower the serum P concn. without change in Ca concn.

L4 ANSWER 29 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:733715 CAPLUS
DN 123:117513
TI Sulfuric acid recovery from titanium-containing solutions by titanium extraction followed by electrodialysis or diffusion **dialysis**
IN Okajima, Tokuichi; Narama, Minoru; Nakagawa, Hiroshi; Hamano, Toshikatsu; Ootsuka, Shigeharu; Aoki, Ryosuke
PA Nissan Eng, Japan; Asahi Glass Co Ltd
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07144906	A2	19950606	JP 1993-314413	19931119

AB Ti contained in H2SO4 solns. is extractively removed to .ltoreq.200 ppm by contacting the solns. with an org. solvent contg. .gtoreq.1 compds. selected from O-contg. org. solvents, alkylamines, and alkylarylamines, and the solns. are treated by diffusion **dialysis** or electrodialysis to recover the H2SO4. The H2SO4 is recovered in high yields.

L4 ANSWER 30 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:701468 CAPLUS
DN 123:117382
TI Purification of nickel sulfate crystallization mother liquor by **dialysis** method
AU Chen, Yongkang
CS Yunnan Smelter, Kunming, 650102, Peop. Rep. China
SO Shuichuli Jishu (1995), 21(3), 156-8
CODEN: SHJIEG; ISSN: 1000-3770
DT Journal
LA Chinese
AB An industrial expt. for purifying nickel sulfate crystn. mother liquor contg. >550 g/L H2SO4 by using S203 ion-exchange membrane was introduced. The results obtained showed that **dialysis** technol. can meet the requirement of the purifn. effect in the course of copper electrolysis. Cu2+, Fe3+, Ni2+, Bi3+, etc. can be effectively sepd. from the recovered acid. At the water/acid ratio of 0.9-1.1 and the unit treatment capacity of .gtoreq.50 L/m2 day, the concn. of recovered acid is >274 g/L; the concn. of residual acid <280 g/L; and the cations retention rate >90%.

L4 ANSWER 31 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:484642 CAPLUS
DN 122:217782
TI Method for reclaiming metal sulfate-containing waste sulfuric acid
IN Iyatomi, Nobuyoshi; Mikami, Yasuie
PA Nittetsu Mining Co., Ltd., Japan
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9503994	A1	19950209	WO 1994-JP1212	19940722
	W: AU, CA, CN, US				
	RW: DE, FR, GB				
	JP 07041976	A2	19950210	JP 1993-190442	19930730
	JP 2968913	B2	19991102		
	CA 2145986	AA	19950209	CA 1994-2145986	19940722
	AU 9472376	A1	19950228	AU 1994-72376	19940722
	AU 672327	B2	19960926		
	EP 662929	A1	19950719	EP 1994-921802	19940722
	EP 662929	B1	19971022		
	R: DE, FR, GB				
	CN 1113081	A	19951206	CN 1994-190556	19940722
	CN 1044221	B	19990721		
	US 6337061	B1	20020108	US 1995-406946	19950328
PRAI	JP 1993-190442	A	19930730		
	WO 1994-JP1212	W	19940722		

AB The process comprises subjecting the waste H2SO4 soln. to extn. to remove Ti, and subjecting the soln. obtained to diffusive **dialysis**. The Ti is recovered from the ext. by treatment with alkali. FeSO4 is removed by cooling the waste H2SO4 soln. before extn. The H2SO4 has high concn. and low impurity content.

L4 ANSWER 32 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:419195 CAPLUS
DN 122:185176

TI Effect of iron and phagocytosis on murine macrophage activation in vitro
AU Gauthier, Y. P.; Isoard, P.
CS Unite Microbiol., Cent. Rech. Service Sante des Armees, La Tronche, 38702, Fr.
SO Biological Trace Element Research (1995), 47(1-3), 37-50
CODEN: BTERDG; ISSN: 0163-4984
PB Humana
DT Journal
LA English
AB Iron-exposed murine macrophages have a modified bactericidal activity as shown by previous observations. In order to assess the role of iron in macrophage activation, as measured by free radical prodn. and by intracellular bacterial killing, murine **peritoneal** macrophages were cultivated in the presence of various sources of iron, human **iron**-satd. transferrin and ammonium **ferric citrate**, or **iron** chelators, Desferal, and human Apo-transferrin, and were infected with an enteropathogenic strain of E. coli. The release of nitrate (NO2-), and the prodn. of superoxide anion (O2-) and hydrogen peroxide (H2O2) by the phagocytes were measured and compared to the prodn. by uninfected macrophages. The synergistic action with murine rIFN-.gamma. was also studied in the radical prodn. reaction and for the bactericidal activity of macrophages. Our results show that in vitro phagocytosis of E. coli induced elevated prodn. of NO2- and H2O2 by macrophages, and that oxygen derivs. were released independently of the presence of added iron or chelator. Despite a phagocytosis-related enhancement of NO2- release, reactive nitrogen intermediates (RNI) are not directly involved in the bactericidal mechanism, as revealed by increased intracellular killing owing to RNI inhibitors. Moreover, bacterial killing may depend on oxygen derivs., as suggested by the effect of the antioxidant sodium ascorbate leading to both a diminished H2O2 prodn. and a decreased bactericidal activity of macrophages.

L4 ANSWER 33 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1995:417701 CAPLUS
DN 122:263750
TI A continuous flow in vitro method to predict bioavailability of Fe from foods
AU Minihane, A. M.; Fox, T. E.; Fairweather-Tait, S. J.
CS Norwich Lab., AFRC Inst. Food Res., Norwhich, NR4 7UA, UK
SO Ber. Bundesforschungsanst. Ernaehr. (1993), BFE-R-93-01, Bioavailability '93, Pt. 2, 175-9
CODEN: BFEBD6; ISSN: 0933-5463
DT Report
LA English
AB A novel continuous flow in vitro method for detn. of Fe bioavailability from com. infant formulas and other foods was developed and described. The method is based on peptic digestion of the sample and use of an isotope indicator (59Fe), and a **dialysis** membrane and application of potential inhibitors and enhancers of **iron** absorption (**citric** acid, ascorbic acid, tannic acid, catechin, and caffeic acid). The advantages of the described method over the commonly used equil. **dialysis** technique are discussed.

L4 ANSWER 34 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:640463 CAPLUS
DN 121:240463
TI Treatment of radioactive waste solutions containing metal complexes or of eluants from treating spent ion-exchange resins
IN Kitahashi, Takuya; Yoshimura, Shuichi; Tsukamoto, Juichi; Oikawa, Yasuo;

Mizukoshi, Seiji; Ooyama, Etsuo
PA Doryokuro Kakunenryo, Japan; Fuji Electric Co Ltd
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 06130188	A2	19940513	JP 1992-274710	19921014
JP 2925413	B2	19990728		

AB The title process comprises the steps of (1) **dialysis** of the waste to sep. and recover the components of the eluant, (2) addn. of an oxidizing agent at a high temp. to the waste to decomp. the metal complex, (3) addn. of a pH-adjusting agent and a copptg. agent to carry out copptn., (4) sepn. of the supernatant by a membrane, (5) addn. of a chelating agent to the treated soln. obtained in step 4, and (6) evapn., drying, melting, and solidification of the pptn.-concd. soln., backwash soln., and chelate regenerated soln. discharged from steps 3, 4, and 5 as a whole. The vol. of the wastes can be reduced to a min.

L4 ANSWER 35 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:587335 CAPLUS
DN 121:187335
TI Solutions for **peritoneal dialysis** containing gluconic acid
IN Bellini, Gianni; Gavioli, Giuliana
PA B. Braun Carex S.p.A., Italy
SO Eur. Pat. Appl., 5 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 612528	A1	19940831	EP 1994-102553	19940221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
PRAI IT 1993-MI360		19930224		

AB A **peritoneal dialysis** soln. contains electrolytes and gluconic acid or a gluconate salt. Gluconic acid shows good osmotic properties but is not a nutrient, as shown in tests on **peritoneal** mesothelial cells. Use of gluconic acid in place of glucose avoids the neg. effects of glucose, including altered glycolipid metab., hypertriglyceridemia, glucose intolerance, and alterations in insulin and glucagon levels, of special consequence for diabetic patients. Thus, a steam-sterilized soln. contained Na+ 125-145, K+ 0-4, Ca2+ 2.00-5.00, Mg2+ 0.5-1.5, Cl- 990-120, acetate or lactate 35-45 mequiv/L, and gluconic acid 75-250 mM.

L4 ANSWER 36 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:568931 CAPLUS
DN 121:168931
TI Synthesis and characterization of water soluble superstructured porphyrins and their iron complexes
AU Jimenez, Hermas R.; Momenteau, Michel
CS Sect. Biol., Inst. Curie, Orsay, 91405, Fr.
SO New J. Chem. (1994), 18(5), 569-74
CODEN: NJCHE5; ISSN: 1144-0546
DT Journal

LA English
AB The synthesis of H2O-sol. 1-face hindered porphyrins is reported for the 1st time. Two porphyrins were obtained from the sulfonation of basket-handle porphyrins in concd. H2SO4. These were sepd. by size-exclusion chromatog. followed by neutralization, **dialysis** and lyophilization. The structural assignment of the 2 porphyrins was based on the 1H NMR spectra of the free bases. The trisodium salt of I (Na3I) was prepd. and characterized. The interaction between the Fe(II) porphyrin complex from dithionite redn. of Na3I and imidazole was studied at pH 7 by electronic absorption spectroscopy. A 1:2 complex was formed and its stability and acidity consts. are reported.

L4 ANSWER 37 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:505593 CAPLUS
DN 121:105593
TI Regulation of iron on bacterial growth and production of thermostable direct hemolysin by Vibrio parahaemolyticus in **intraperitoneal** infected mice
AU Wong, Hin Chung; Lee, Yeong Sheng
CS Dep. Microbiol., Soochow Univ., Taipei, 11102, Peop. Rep. China
SO Microbiol. Immunol. (1994), 38(5), 367-71
CODEN: MIIMDV; ISSN: 0385-5600
DT Journal
LA English
AB Pathogenesis of Vibrio parahemolyticus is not clearly understood. Effects of iron on the bacterial proliferation and prodn. of thermostable direct hemolysin (TDH) in i.p. infected mice were studied. Injection of bacterial culture in the presence of **ferric** ammonium **citrate** (100 .mu.g/mL) significantly enhanced the lethality for mice, and simultaneously activated bacterial proliferation in vivo. The iron-limited cultures showed better proliferation than those iron-rich cultures in response to the addn. of supplementary iron source. Prodn. of TDH by the hemolytic strains ST550 and D62 was higher in the iron-limited cultures than the iron-rich cultures. Prodn. of TDH by both the iron-limited or iron-rich cultures was inhibited by the addn. of iron. In conclusion, the virulence enhancement effect of iron in V. parahemolyticus was probably accomplished by activating bacterial proliferation in vivo and not by stimulating the prodn. of TDH. V. parahemolyticus precultured in iron-limited condition may be more adaptable to in vivo environment.

L4 ANSWER 38 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:200486 CAPLUS
DN 120:200486
TI **Dialysis** system for large intestine, method of use, and filtrate solution composition
IN Stone, Andrew
PA USA
SO PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9403215	A1	19940217	WO 1993-US7152	19930729

W: AU, CA, JP
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRAI US 1992-922673 A 19920730
AB A **dialysis** system and method for removing toxic matter from the

large intestine are disclosed. The **dialysis** system (diagram included) comprises an input tube, an output tube concentric with the input tube (both of which tubes are to be inserted in the large intestine), an input pressure pump connected to deliver filtrate soln. from an input container to the input tube, and an input suction pump connected to the output tube to remove filtrate soln. Pressure gauges control the input and output pumps so that an input pressure level of 75 mm Hg is not exceeded, and so that the output suction pump is disabled unless the input pressure level exceeds 45 mm Hg. A filtrate soln. compn., comprising a vasodilator of niacin, a high mol. wt. protein in the form of casein, a mineral constituent, and other components, is also provided.

L4 ANSWER 39 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:189493 CAPLUS
DN 120:189493
TI Macrophage permissiveness for Legionella pneumophila growth modulated by iron
AU Gebran, S. J.; Newton, C.; Yamamoto, Y.; Widen, R.; Klein, T. W.; Friedman, H.
CS Dep. Med. Microbiol. Immunol., Univ. South Florida, Tampa, FL, 33612-4799, USA
SO Infect. Immun. (1994), 62(2), 564-8
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB The authors investigated the modulation of iron in 2 populations of macrophages which differ in susceptibility to L. pneumophila intracellular proliferation. Previously, it was reported that thioglycolate-elicited **peritoneal** macrophages obtained from the inbred A/J mouse strain readily support the intracellular growth of L. pneumophila, while resident macrophages from the same strain do not. In this study, the authors show that A/J elicited macrophages exhibit markedly higher expression of transferrin receptor and intracellular iron content than A/J resident macrophages. Furthermore, apotransferrin and desferrioxamine inhibited the intracellular proliferation of L. pneumophila in elicited macrophages, and this suppression was reversed by the addns. of Fe-transferrin or ferric nitrilotriacetate. Fe-transferrin and ferric nitrilotriacetate did not further increase the intracellular proliferation of L. pneumophila in thioglycolate-elicited macrophages. However, **ferric citrate** and **ferric** nitrilotriacetate stimulated in a dose-dependent manner the growth of L. pneumophila in resident macrophages. Furthermore, equimolar concns. of desferrioxamine reversed the stimulatory effect of iron in these resident cells. Thus, differences in susceptibility to L. pneumophila growth between permissive elicited macrophages and nonpermissive resident macrophages from the A/J mouse strain are due to intracellular availability of iron.

L4 ANSWER 40 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1994:156115 CAPLUS
DN 120:156115
TI Iron polymers impair the function and maturation of macrophages
AU Gebran, S.J.; Romano, E.L.; Soyano, A.
CS Cent. Med. Exp., Inst. Venez. Invest. Cient., Caracas, 1020A, Venez.
SO Immunopharmacol. Immunotoxicol. (1993), 15(4), 397-414
CODEN: IITOEF; ISSN: 0892-3973
DT Journal
LA English
AB **Iron citrate**, but not sodium **citrate**,

inhibits the function and maturation of murine macrophages (M.phi.s). However, such inhibition is only obsd. in the presence of **ferric citrate** with a metal-to-ligand molar ratio of 1:1, but not with **ferric citrate** with a metal-to-ligand molar ratio of 1:10 in which the hydrolyzation and polymn. of iron in physiol. solns. is prevented. Accumulation of ferric iron on the cytoplasm of M.phi.s was obsd., but only in the group of M.phi.s treated with **ferric citrate** 1:1. Increasing the concn. of serum in the culture medium diminished the inhibitory effect of **ferric citrate** 1:1. The inhibitory capacity of iron polymer was probably assocd. with its ability to both interact with the cell constituents of the cytoplasm and stimulate lipid peroxidn.

L4 ANSWER 41 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1993:232139 CAPLUS
DN 118:232139
TI Gamma interferon cooperates with lipopolysaccharide to activate mouse splenic macrophages to an antihistoplasma state
AU Lane, Thomas E.; Wu-Hsieh, Betty A.; Howard, Dexter H.
CS Los Angeles Sch. Med., Univ. California, Los Angeles, CA, 90024, USA
SO Infect. Immun. (1993), 61(4), 1468-73
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB Inhibition of the intracellular growth of Histoplasma capsulatum by murine resident red pulp splenic macrophages was examd. Splenic macrophages, unlike resident **peritoneal** macrophages, required a prolonged preincubation (18 h) with recombinant murine .gamma. interferon (rMuIFN-.gamma.) for activation. To be fully activated, the splenic macrophages required incubation with rMuIFN-.gamma. in combination with 0.1 .mu.g of lipopolysaccharide (LPS) per mL. Splenic macrophages stimulated with rMuIFN-.gamma., LPS, or rMuIFN-.gamma. and LPS produced tumor necrosis factor .alpha. (TNF-.alpha.), but recombinant murine TNF-.alpha. (rMuTNF-.alpha.) did not activate macrophages when used alone or as a second signal with rMuIFN-.gamma.. Anti-TNF-.alpha. antibody did not block IFN-.gamma. LPS activation of splenic macrophages to any significant extent. One hundred micromolar **ferrous sulfate** antagonized IFN-.gamma.-LPS activation of splenic macrophages, indicating that iron was involved in the fungistatic activity of cytokine-stimulated phagocytes. Thus, splenic macrophages differ significantly from **peritoneal** macrophages in their requirements for activation and the mechanism by which splenic macrophages exert their antifungal effects involves iron.

L4 ANSWER 42 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:606739 CAPLUS
DN 117:206739
TI Interaction of aluminum citrate with horse spleen ferritin
AU Dedman, Daniel J.; Treffry, Amyra; Harrison, Pauline M.
CS Dep. Mol. Biol. Biotechnol., Univ. Sheffield, Sheffield, S10 2UH, UK
SO Biochem. J. (1992), 287(2), 515-20
CODEN: BIJOAK; ISSN: 0306-3275
DT Journal
LA English
AB Horse spleen ferritin bound aluminum poorly after equil. **dialysis** with buffered aluminum citrate solns. Not more than 10 aluminum atoms/ferritin mol. were bound from a 25 .mu.M aluminum soln., pH 7.4, and the degree of binding was dependent on the method used to prep. the aluminum citrate soln. Up to 120 aluminum atoms/mol. were bound when

ferritin iron cores were reconstituted by the addn. of 3000 Fe atoms to apoferritin in the presence of aluminum citrate. Comparison of previously published binding consts. of ferritin and citrate for aluminum suggests that, in the cell, the prevalence of small ligands effectively prevents the assocn. of large amts. of aluminum with ferritin.

L4 ANSWER 43 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:589891 CAPLUS
DN 117:189891
TI L-Arginine-dependent killing of intracellular Ehrlichia risticii by macrophages treated with gamma interferon
AU Park, Jaechan; Rikihisa, Yasuko
CS Coll. Vet. Med., Ohio State Univ., Columbus, OH, 43210-1092, USA
SO Infect. Immun. (1992), 60(9), 3504-8
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB Thioglycolate-induced murine **peritoneal** macrophages infected with E. risticii and treated in vitro with .gamma.-interferon (IFN-.gamma.) developed antiehrlichial activity that eliminated the intracellular bacteria. This antiehrlichial activity was suppressed by NG-monomethyl-L-arginine, a competitive inhibitor of NO synthesis from L-arginine, but not by L-tryptophan. Increased levels of NO2-, an oxidative product of NO, were measured in cultures of infected macrophages treated with IFN-.gamma.. Na nitroprusside, which spontaneously releases NO, also showed the antiehrlichial activity. The antiehrlichial activity by reactive N intermediates was not mediated by elevation of the cellular concn. of cGMP since the addn. of 8-bromo-cGMP itself had no influence on ehrlichial infection of macrophage. Addn. of the intracellular Fe chelator deferoxamine also inhibited E. risticii infection in vitro. Apparently, intracellular E. risticii survival is Fe dependent, and prodn. of reactive N intermediates triggers Fe loss from crit. target enzymes of E. risticii, leading to lethal metabolic inhibition. However, addn. of excess FeSO4, **ferric citrate**, or Fe-satd. transferrin did not counteract the antiehrlichial effect induced by IFN-.gamma..

L4 ANSWER 44 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:513035 CAPLUS
DN 117:113035
TI Thin film composite membranes from vinyl and related monomers
IN McRae, Wayne A.
PA Ionics Inc., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5118424	A	19920602	US 1990-620989	19901130

AB Title membranes, useful for reverse osmosis, nanofiltration, ultrafiltration, **dialysis**, pervaporation, good gas sepn., etc., are prepd. by phase transfer polymn. of 1st phase contg. polymerizable vinyl or related monomer(s) at the interface of 2nd phase contg. necessary components to initiate polymn. of the monomer(s) on and/or in a porous support or a precursor of the support. The two phases are substantially insol. in each other and .gtoreq.1 of the phases is a fluid. Thus, immersing polysulfone diaphragm in 1 L H2O soln. contg. N,N'-methylenebisacrylamide 15, **ferrous** ammonium **sulfate**

0.3, and Na lauryl sulfate 0.1 g, removing the excess soln. than in 1 L hexane contg. 2.4 g Bz2O2, and polymg. for 90 min. at 80.degree. (covered with film and sandwiched between glass plates) gave thin film composite membranes.

L4 ANSWER 45 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:489495 CAPLUS
DN 117:89495
TI Some properties of **ferric citrate** relevant to the **iron** nutrition of plants
AU Bienfait, H. Frits; Scheffers, Marco R.
CS Dep. Plant Ecol. Evol. Biol., State Univ. Utrecht, Utrecht, 3508 TB, Neth.
SO Plant Soil (1992), 143(1), 141-4
CODEN: PLSOA2; ISSN: 0032-079X
DT Journal
LA English
AB **Ferric citrate**, the form in which **iron** is transported in dicotyledonous plants, diffuses slowly through cotton cellulose **dialysis** membranes, used to serve as a model for plant cell walls. KCl at mM concns. stimulates diffusion. Photoredn. of **ferric citrate** results in a rapid and nearly complete redn. of **iron** when the **citrate** concn. is low (50 .mu.M) as in the xylem sap of plants growing on non-calcareous soils. In 1 mM citrate, as in the xylem sap of plants that activate their Fe-efficiency reactions, fast reoxidn. prevents the buildup of high **ferrous** levels until after **citrate** has been largely broken down by photodestruction. Photodestruction of **citrate**, catalyzed by **iron**, results in increase of pH in the soln. and in the formation of a nondialyzable form of iron, and thus can lead to deposition of inactive iron in leaves.

L4 ANSWER 46 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:413828 CAPLUS
DN 117:13828
TI Treatment of acid-effluent by diffusion-**dialysis** and acid-retardation
AU Sato, Yoshio; Murayama, Katsuo; Nakai, Toshihiro
CS Hydrospheric Environ. Protect. Dep., Natl. Inst. Resourc. Environ., Tsukuba, 305, Japan
SO Mizu Kankyo Gakkaishi (1992), 15(3), 195-203
CODEN: MKGAEY
DT Journal
LA Japanese
AB Treatment of acidic wastewaters contg. salts by diffusion **dialysis** (DD) and acid retardation (AR) and the effect of salts were examd. Acid permeates through the membrane preferentially; and HNO3 removal rate was higher than that of the other acids in DD. Salt was eluted faster than acid in HNO3 and H2SO4 soln. system in AR. HCl was not sepd. well by AR. Salt enhanced the elution peak height of HNO3 in AR and the removal rate of acid in DD. This effect was attributed to an increase adsorption of acid by the anion exchange resin in the presence of salt. H2SO4 enhanced the concn. of salt in the elution front.

L4 ANSWER 47 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1992:8473 CAPLUS
DN 116:8473
TI Manufacture and usage of sulfuric acid
IN Hanada, Fumio; Oomura, Nobuhiko; Hirayama, Hiroki
PA Tokuyama Soda Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03183603	A2	19910809	JP 1989-317655	19891208
	JP 2647721	B2	19970827		

AB H2SO4 is sepd. from its salt-contg. solns. by diffusion **dialysis** using anion-exchange diaphragm of diffusion const. ratio of salt/H2SO4 .ltoreq.4/1000 and then concd. to .gtoreq.1400 g/L to give H2SO4, useful for manuf. and purifn. of TiO2. The diaphragms may be prepd. from anion-exchanging groups and haloalkyl-contg. polymer membranes irradiated with ionization radiation; the starting solns. may be wastewater from TiO2 manuf.; or the concn. process may be carried out using SO3 adsorbents.

L4 ANSWER 48 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:650739 CAPLUS
DN 115:250739
TI Ferripyoverdine-reductase activity in Pseudomonas fluorescens
AU Halle, Felix; Meyer, Jean Marie
CS Lab. Microbiol., Inst. Le Bel, Strasbourg, F-67000, Fr.
SO Biol. Met. (1989), 2(1), 18-24
CODEN: BMETE8; ISSN: 0933-5854
DT Journal
LA English
AB Enzymic release of iron from ferripyoverdine through a reductive mechanism was demonstrated in cell-free exts. of P. fluorescens. Ferripyoverdine reductase activity was localized primarily in the cytoplasm and/or periplasm and appeared not to be affected by the iron status of the cells. The reaction required a strict anaerobic environment and was fully inhibited by oxygen, whereas NADH was the most effective reductant. Ferripyoverdines from other bacterial sources (P. aeruginosa ATCC 15692, P. fluorescens ATCC 13525, P. fluorescens ATCC 17400) were able to serve as **iron** sources as well as **ferric citrate**. However, the activity with **ferric citrate** was not strongly affected by oxygen and did not display the characteristic lag phase obsd. with ferripyoverdines, suggesting the occurrence of a specific **ferric citrate iron** reductase. FMN should play a crit. role in the reductive mechanism since it was absolutely required for the activity to occur with an intensively **dialyzed** cell-free ext., whereas it greatly stimulated (50-fold) the NADH-mediated activity of a crude ext.

L4 ANSWER 49 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:605902 CAPLUS
DN 115:205902
TI Nitric oxide derived from L-arginine impairs cytoplasmic pH regulation by vacuolar-type hydrogen ion ATPases in **peritoneal** macrophages
AU Swallow, Carol J.; Grinstein, Sergio; Sudsbury, Rae A.; Rotstein, Ori D.
CS Dep. Surg., Toronto Gen. Hosp., Toronto, ON, M5G 2C4, Can.
SO J. Exp. Med. (1991), 174(5), 1009-21
CODEN: JEMEAV; ISSN: 0022-1007
DT Journal
LA English
AB The ability of macrophages (M.phi.) to function within an acidic environment has been shown to depend on cytoplasmic pH (pHi) regulation by vacuolar-type H+ ATPases. M.phi. metabolize L-arginine via an oxidative

pathway that generates nitric oxide, nitrate, and nitrite. Since each of these products could potentially inhibit vacuolar-type H+ ATPases, the effect was investigated of L-arginine metab. on M.phi. pHi regulation in thioglycolate-elicited murine **peritoneal** M.phi.. The H+ ATPase-mediated pHi recovery from an imposed cytoplasmic acid load was measured fluorometrically. When M.phi. were incubated with L-arginine (0.25-2.0 mM), their rate of pHi recovery declined progressively from 2 to 6 h of incubation. The recovery rate of cells incubated in arginine-free medium remained stable over the same period. The impairment of pHi recovery was specific for L-arginine, and was blocked competitively by NG-monomethyl-L-arginine, demonstrating its dependence on L-arginine metab. The inhibition of pHi recovery was enhanced by lipopolysaccharide, an agent known to stimulate L-arginine metab. by M.phi.. Scavenging the L-arginine metabolite NO with either **ferrous sulfate** or **ferrous** myoglobin prevented the inhibition of pHi recovery, implying that L-arginine-derived NO was the species responsible for the inhibition. This concept was supported by the finding of elevated nitrite levels in the supernatant of cells incubated in L-arginine. Incubation of M.phi. with Na nitroprusside mimicked the L-arginine-dependent inhibition of H+ ATPase activity. Treatment with the cyclic GMP analog, 8-bromoguanosine 3',5'-cyclic monophosphate, similarly impaired M.phi. pHi recovery, suggesting that a nitric oxide-stimulated elevation of cyclic GMP may contribute to the L-arginine-dependent inhibition of pHi regulation.

L4 ANSWER 50 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:590611 CAPLUS
DN 115:190611
TI Estimation of equilibrium compositions in **dialysis** of aqueous solutions of metal sulfates, MeSO4, on cation-exchange membranes
AU Macenauer, Jaroslav; Handlirova, Marie; Machac, Ivan
CS Dep. Phys. Chem., Inst. Chem. Technol., Pardubice, 53210, Czech.
SO J. Membr. Sci. (1991), 60(2-3), 157-67
CODEN: JMESDO; ISSN: 0376-7388
DT Journal
LA English
AB A theor. math. model is presented which gives the final equil. established on both sides of a cation-exchange membrane of a discontinuous model **dialyzer** between the feed, a bivalent metal sulfate soln., and the stripping soln. of H2SO4. The soln. of the model (represented by a system of nonlinear equations with a no. of input parameters) for various starting concns. and various stability consts. of the sulfates (NiSO4, FeSO4, CoSO4, CuSO4, ZnSO4, CdSO4) provides information on the attainable effectiveness of **dialysis** under specified conditions. The theor. results were verified exptl. by dialyzing solns. of NiSO4 and CuSO4.

L4 ANSWER 51 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:498660 CAPLUS
DN 115:98660
TI Method of preparing **ferric sulfate** coagulants
IN Hirano, Minoru; Sato, Hiroshi; Inamoto, Tetsuo; Sato, Hideyuki; Yanagawa, Reiko; Magota, Hiromi; Shiratori, Juichi
PA Nippon Kokan K. K., Japan; Dowa Mining Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

[redacted] [redacted]

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03056103	A2	19910311	JP 1989-188866	19890724

AB Fe-oxidizing bacteria are acclimated in a bioreactor, where H2SO4 soln. contg. FeSO4 is introduced, and the FeSO4 is oxidized to make a **ferric sulfate** coagulant. The method economically converts FeSO4 in acid pickling waste into a ferric coagulant. Thus, Fe-oxidizing bacteria were cultivated at 20-30.degree. in a 5 L bioreactor at pH 2, Fe2+ 8 g/L, then acclimated to increase the Fe concn. and lower pH, to Fe2+-oxidizing capability of 50 g-Fe/L per 24 h. Then, a wastewater contg. H2SO4 100 g/L, Fe2+ 60 g/L was diffusion-**dialyzed** to H2SO4 14 g/L, Fe2+ 50 g/L, and adjusted to pH 1, fed to the bioreactor at 0.22 L/h to obtain a **ferric sulfate** coagulant (pH 1.0, Fe2+ 0.003%, total Fe 4.8%). The coagulant was comparable to a com. ferric coagulant in COD and turbidity removal.

L4 ANSWER 52 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:452869 CAPLUS
DN 115:52869
TI Recovery of high-purity **ferrous sulfate** from spent sulfuric acid solution from pickling of stainless steels
IN Yamazaki, Yoshinori; Miyatake, Yuji; Morimoto, Yasuo; Tatsuma, Kiyoshi
PA Tetsuhara K. K., Japan; Daido Chemical Engineering Corp.
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03069515	A2	19910325	JP 1989-204776	19890809
	JP 08005676	B4	19960124		

AB Waste H2SO4 contg. high amt. of Cr from pickling of stainless steels with H2SO4 is fed into diffusion **dialyzer** to remove H2SO4, mech. mixed with Fe or mill scales at 50-100.degree. to ppt. Cr, filtered, mixed with H2SO4 to pH .ltoreq.2, cooled for crystn., and sepd. to give high-purity FeSO4.7H2O.

L4 ANSWER 53 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:138828 CAPLUS
DN 114:138828
TI Iron- and manganese-containing superoxide dismutases from Methylomonas J: identity of the protein moiety and amino acid sequence
AU Matsumoto, Takashi; Terauchi, Kumiko; Isobe, Toshiaki; Matsuoka, Kunie; Yamakura, Fumiyuki
CS Dep. Food Sci. Nutr., Showa Women's Univ., Tokyo, 154, Japan
SO Biochemistry (1991), 30(13), 3210-16
CODEN: BICHAW; ISSN: 0006-2960
DT Journal
LA English
AB Mn-superoxide dismutase (SOD) and Fe-SOD were isolated from Methylomonas J, an aerobic methylotrophic bacterium, grown in methylamine media contg. either Mn (Mn-rich medium) or Fe (Fe-rich medium), resp. The specific activity of the Mn-SOD was 2250 units mg-1 (mol of Mn)-1 (mol of dimer)-1, and the metal content of the enzyme was 0.98 mol of Mn and 0.12 mol of Fe per mol of dimer, while those of Fe-SOD were 88.5 units mg-1 (mol of Fe)-1 (mol of dimer)-1 and 1.04 mol of Fe and 0.02 mol of Mn. The electrophoretic mobilities in the presence of SDS, with or without urea, and the chromatog. behavior on an HPLC column using an octadodecyl

silicated column and a gel permeation column were identical. Amino acid compns. were practically indistinguishable in both SODs. The enzyme activity was restored by **dialysis** of an apoprotein obtained from the Mn-enzyme with either manganese **sulfate** or **ferrous** ammonium **sulfate** up to an activity level similar to that for the native Mn-SOD and the native Fe-SOD, resp. The same result has been reported with the reconstitution using an apoprotein obtained from the Fe-enzyme. These results suggest the possibility that both types of SODs are composed of a single apoprotein synthesized in cells grown in either the Fe-rich medium or the Mn-rich medium. The amino acid sequence of Fe-SOD was deduced by analyses of peptide fragments derived from limited hydrolysis of apoprotein with lysylendopeptidase. Alignment of the peptide sequences with published amino acid sequences of Fe- and Mn-SOD suggests that the amino acid sequence of Methylomonas SOD resembles closely that of the Mn-SOD, except that a few amino acid residues are substituted for the Fe-SOD-specific amino acid residues from the other amino acid residues. Possible candidates of amino acid residues which may weaken a specificity of the metals to exhibit the enzyme activity of Methylomonas SOD are discussed.

L4 ANSWER 54 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1991:22618 CAPLUS
DN 114:22618
TI Influence of bovine lactoferrin on the growth of Listeria monocytogenes
AU Payne, K. D.; Davidson, P. M.; Oliver, S. P.; Christen, G. L.
CS Dep. Food Technol. Sci., Univ. Tennessee, Knoxville, TN, 37901, USA
SO J. Food Prot. (1990), 53(6), 468-72
CODEN: JFPRDR; ISSN: 0362-028X
DT Journal
LA English
AB The influence of bovine lactoferrin (LF) and Apo-LF on growth of L. monocytogenes in Ultra-High Temp. (UHT) 2% fat milk was detd. The effect of LF was dependent upon both the degree of Fe satn. and concn. Before Fe removal, LF was .apprx.52% satd. with Fe; and at 23 and 46 mg/mL LF, minimal growth inhibition of L. monocytogenes was obsd. Following **dialysis**, Apo-LF Fe satn. was reduced to .apprx.18%. At 15 and 30 mg/mL Apo-LF, a bacteriostatic effect against L. monocytogenes was obsd. Inhibition of growth assocd. with Apo-LF was abolished when **ferric** ammonium **citrate** was added to sat. the Fe binding sites of the Apo-LF.

L4 ANSWER 55 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1990:472728 CAPLUS
DN 113:72728
TI Induction of hepatic metallothionein by **intraperitoneal** metal injection: an associated inflammatory response
AU Fleet, James C.; Golemboski, Karen A.; Dietert, Rodney R.; Andrews, Glen K.; McCormick, Charles C.
CS Dep. Poult. Avian Sci., Cornell Univ., Ithaca, NY, 14853, USA
SO Am. J. Physiol. (1990), 258(6, Pt. 1), G926-G933
CODEN: AJPHAP; ISSN: 0002-9513
DT Journal
LA English
AB The nature of hepatic metallothionein (MT) induction by several metals and its relationship to an inflammatory response was studied in chicks. I.p. injection of chromium (Cr), manganese, and iron (Fe) caused a much greater increase in hepatic MT (10.2-, 9.0-, and 6.8-fold) compared with cobalt and nickel (2.5- and 2.9-fold) compared with cobalt and nickel (2.5- and 2.9-fold); thus not all transition metals are effective. Cr3+ caused

markedly greater hepatic MT accumulation than Cr6+, suggesting that the ionic nature of the metal is an important factor. Small org. complexes of Fe (**ferrous gluconate** or lactate, 6.2-fold) caused significantly greater accumulation of hepatic MT than ferric dextran (1.4-fold), a large org. aggregate. In vitro data from chick hepatocytes and/or fibroblasts clearly indicated that Fe does not effect the induction of MT directly. The role of inflammation, as measured by recruitment of **peritoneal** exudate cells (PEC), was examd. Endotoxin (LPS), Sephadex (S), and Fe elicited significant elevations in PEC no. of 24 h posttreatment (S), and Fe elicited significant elevations in PEC no. at 24 h posttreatment (S = Fe > LPS .mchgt. control). The percentage of heterophils but not macrophages was significantly correlated with the accumulation and induction of hepatic MT. In a similar expt. with Cr, it was demonstrated that Cr3+ but not Cr6+ stimulated MT mRNA accumulation and concomitant heterophil infiltration at 3 h after injection. The results indicate that the induction of hepatic MT by the parenteral administration of a no. of metals is dependent on the chem. nature of the metal and is assocd. with an inflammatory response.

L4 ANSWER 56 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1990:195055 CAPLUS
DN 112:195055
TI **Citrate-iron**(III) transformation by Arthrobacter siderocapsulatus under different cultivation conditions
AU Verkhovtseva, N. V.; Dubinina, G. A.; Zhukova, T. V.
CS Yarosl. Gos. Univ., Yaroslavl, USSR
SO Mikrobiologiya (1990), 59(1), 79-84
CODEN: MIKBA5; ISSN: 0026-3656
DT Journal
LA Russian
AB NMR spectroscopy was used to study Fe compds. produced by A. siderocapsulatus in a medium contg. citrate-Fe(III) in batch culture and in a **dialysis** cell. The cells transformed citrate-Fe(III) to yield inorg. amorphous and cryst. Fe(II) and Fe(III) compds.: (1) amorphous aq. Fe oxides (65-80%), (2) weakly cryst. Fe(III) hydroxides formed only in a medium with a **dialysis** cell (apparently, protoferrihydrite), (3) ferrihydrite, formed in a batch culture with aeration (20-30%), and (4) fine cryst. Fe(II) formed in the **dialysis** cell. Their formation did not correlate with the transport and accumulation of Fe in the cells. The results provide a better insight into the ability of heterotrophic aerobic bacteria to biomineralize org. Fe compds. as well as into their mineral-forming activity in nature.

L4 ANSWER 57 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1990:69435 CAPLUS
DN 112:69435
TI Effects of deferoxamine, feroxamine and iron on experimental mucormycosis (zygomycosis)
AU Van Cutsem, Jan; Boelaert, Johan R.
CS Dep. Bacteriol. Mycol., Janssen Res. Found., Beerse, B-2340, Belg.
SO Kidney Int. (1989), 36(6), 1061-8
CODEN: KDYIA5; ISSN: 0085-2538
DT Journal
LA English
AB Mucormycosis was induced in healthy guinea pigs by i.v. injection of spores from Rhizopus microsporus var. rhizopodiformis or from Rhizopus oryzae, leading to a reproducible mortality. Pretreatment with one dose of 50 mg deferoxamine (DFO) shortened the animal survival from 4.2 to 3.3

days for R. rhizopodiformis and from 8.8 to 7.3 days for R. oryzae. Survival was shortened even more after 4 doses of DFO. After R. oryzae infection, animal survival decreased similarly after DFO, feroxamine, or DFO combined with Fe3+ citrate. Fe3+ citrate also decreased survival, although less than DFO alone or combined with Fe3+. In vitro growth of both fungal strains was enhanced by the addn. of DFO or Fe3+ at 0.001-1 mM in the medium. DFO abolished the prolonged survival induced by amphotericin B in vivo and in vitro; 4 doses of DFO abolished the improved survival due to amphotericin B and DFO combined with Fe3+ at .gtoreq.0.1 mM decreased the antifungal activity of amphotericin B in vitro. These results point to a major role of DFO in the pathogenesis of mucormycosis in **dialysis** patients and suggest that DFO behaves as a siderophore for Rhizopus strains, stimulating their growth.

L4 ANSWER 58 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1990:32935 CAPLUS
DN 112:32935
TI Reconstituted human serum from blood or plasma fractions, process for its preparation, and its use in laboratory reagents
IN Nabet, Pierre
PA Bio-France Reactifs, Fr.
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 317439	A1	19890524	EP 1988-402900	19881118
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	FR 2623628	A1	19890526	FR 1987-16314	19871120
	FR 2623628	B1	19900420		
	WO 8904965	A1	19890601	WO 1988-FR565	19881118
	W: AU, BR, JP, KR, US				
	AU 8827132	A1	19890614	AU 1988-27132	19881118
PRAI	FR 1987-16314		19871120		
	WO 1988-FR565		19881118		

AB Human serum, reconstituted from .gtoreq.1 residual fraction from fractionation of human plasma and/or human blood and/or human placental or retroplacental blood, is provided which has chem. and physicochem. characteristics (color, content, electrophoretic profile, etc.) similar to those of natural human serum. The reconstituted serum is derived from unused, and normally discarded, fractions of Cohn blood fractionation, thus alleviating problems of cost and availability; it is useful as quality control serum in clin. labs. Plasma withdrawn in the presence of a citrate-contg. soln. was fractionated by the Cohn method. Ppt. fractions III and IV were homogenized in normal or modified Ringer's soln., and the resulting suspension was **dialyzed** .gtoreq.24 h with **dialysis** membranes having a mol.-wt. cutoff .gtoreq.1000 daltons. The **dialyzed** suspension was clarified by centrifugation or filtration, and the protein concn. was adjusted to .apprx.50 g/L by ultrafiltration (membrane cutoff 10,000 daltons). Fraction V supernatant was ultrafiltered as above to a protein concn. of 30-80 g/L, and the soln. obtained was **dialyzed**. A mixt. contg. 50-70% of the soln. obtained from fraction V and 0-30% each of solns. obtained from fractions III and IV was prepd., sterilized by filtration, and stored in sterile bottles. Measurement of turbidity, protein, LH, FSH, IgG, and content of 19 other blood substances indicated the reconstituted serum was stable .gtoreq.21 mo.

L4 ANSWER 59 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:631194 CAPLUS
DN 111:231194
TI Preparation of **ferrous citrate** micelle complexes for nutritional **iron** supplements
IN Antonini, Eraldo; Vidic, Hans Joreg
PA Schering A.-G., Fed. Rep. Ger.
SO Eur. Pat. Appl., 4 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 308362	A1	19890322	EP 1988-730208	19880909
	EP 308362	B1	19940525		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	WO 8902426	A1	19890323	WO 1988-DE568	19880909
	W: AU, JP, US				
	AU 8823204	A1	19890417	AU 1988-23204	19880909
	AU 627696	B2	19920903		
	JP 03502570	T2	19910613	JP 1988-507048	19880909
	JP 2950840	B2	19990920		
	AT 106073	E	19940615	AT 1988-730208	19880909
	ES 2056953	T3	19941016	ES 1988-730208	19880909
	US 5206265	A	19930427	US 1992-646789	19920323
PRAI	IT 1987-21904		19870914		
	EP 1988-730208		19880909		
	WO 1988-DE568		19880909		

AB A Fe citrate micelle complex contains a brown solid material characterized in that it consists of C 10.6, H 2.62, O 50.2, Fe 32, and Na 4.6%, it has a mol. wt. 33,000 as detd. by HPLC-LALLS anal., its empirical formula is (C31H91O110Fe20Na7)n, it is sol. in water, insol. in org. solvents, has a UV absorbance in water at .lambda.max 470 nm, extinction E (1%, 1 cm) 23-26.5, a resistance (1% soln.) of 600-700 .OMEGA..cm, a turbidity point (1% soln.) at pH 2.6-2.8. A 0.3M aq. soln. of FeCl3 (prepd. from FeCl3.6H2O) was treated with 2.5 equiv NaHCO3 which was freed from CO2 and treated with stoichiometric amt. of Na citrate and the soln. was allowed to stand for 20 h at room temp. The resulting clear soln. was desalted by **dialysis** against 0.01M phosphate buffer (pH 7.4) and freeze-dried to a water content of 2%. When the Fe citrate micelle complex was administered to rats the blood levels of Fe increased to higher levels than with FeSO4 or ferritin. The complex at >800 mg/kg was not toxic in rats and produced no changes in the gastric mucosa. The micelle complex is characterized as a largely uniform polymeric compd. which is represented by only one band in the electropherogram. The complex is stable at low pH and may pass the stomach without decompn. The compd. may be administered to treat iron deficiencies in children, reconvalescent persons, athletes, or women.

L4 ANSWER 60 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:529539 CAPLUS
DN 111:129539
TI Uricolytic Streptomyces albogriseolus from an Egyptian soil. II. Purification and characterization of the endocellular uricase
AU Ammar, M. S.; Elwan, S. H.; El-Shahed, A. S.
CS Fac. Sci., Al-Azhar Univ., Cairo, Egypt
SO Egypt. J. Microbiol. (1988), Volume Date 1987, 22(2), 281-92

CODEN: EJMBA2; ISSN: 0301-8172
DT Journal
LA English
AB Purifn. of the intracellular uricase of S. albogriseolus was carried out using prodn. of cells in a simple fermentor, prepn. of cell free homogenate, salting out with (NH4)2SO4, **dialysis**, and application to Sephadex G-200, DEAE-cellulose column chromatog. This resulted in 71.2-fold purifn. The enzyme optimum temp. was 30.degree.. The enzyme was inhibited 80% at 50.degree. and 100% at 60.degree., in borate buffer, pH 9.0. An inhibitory effect at all concns. was recorded in the presence of Zn2+, Cu2+, K+, Mn2+, and Hg2+. Both Mg2+ and Ca2+ exhibited no effect at low concns., whereas an inhibitory effect was recorded at high concn. FeSO4 was the only stimulator at 10-5M with no effect at 10-4M and an inhibitory effect at 10-3M. There was a proportional increase of enzyme activity corresponding to the increase of the enzyme concn. The optimum concn. of uric acid was (10 .mu.g/mL). A suggestion for the possible clin. application of the purified enzyme was introduced.

L4 ANSWER 61 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:425129 CAPLUS
DN 111:25129
TI Wood adhesives based on the oxidative coupling reaction of phenols. I. Water resistant adhesives from lignin in spent sulfite liquor
AU Yamaguchi, Haruhiko; Higuchi, Mitsuo; Sakata, Isao
CS Fac. Agric., Kyushu Univ., Fukuoka, 812, Japan
SO Mokuzai Gakkaishi (1988), 34(12), 995-1003
CODEN: MKZGA7; ISSN: 0021-4795
DT Journal
LA Japanese
AB Phenols may be activated by an oxidizing agent and polymd. through the coupling reaction. This principle was used to the prepn. of wood adhesives by reacting various oxidizing agents with the lignin in concd. spent sulfide liquor (SSL). A gel or ppt. was produced which could then be used as an adhesive. With H2O2 as the oxidizing agent, the water resistance of the adhesive was improved by first removing the low-mol. wt. material in the SSL by ultrafiltration or **dialysis** and then acidifying the SSL with H2SO4 or by cation exchange before adding the peroxide. The properties of these adhesives could be improved by adding furfuryl alc. or poly(vinyl alc.).

L4 ANSWER 62 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:417506 CAPLUS
DN 111:17506
TI Iron release from hemosiderin and ferritin by therapeutic and physiological chelators
AU O'Connell, Martin J.; Ward, Roberta J.; Baum, Harold; Peters, Timothy J.
CS Div. Clin. Cell Biol., Clin. Res. Cent., Harrow/Middx., HA1 3UJ, UK
SO Biochem. J. (1989), 260(3), 903-7
CODEN: BIJOAK; ISSN: 0306-3275
DT Journal
LA English
AB Fe release from both human and horse spleen hemosiderin to the therapeutic chelator desferrioxamine by **dialysis** in vitro was substantially less than that from ferritin. This finding contradicts a previous report. Differences in the phosphate content of cores and in core size between hemosiderin and ferritin did not account for the different release rates. Fe released from hemosiderin to the physiol. chelator acetate stimulated lipid peroxidn. in liposomes, whereas that released to stronger chelators

such as citrate and desferal did not. Absorption spectra and gel-filtration studies suggested that the acetate-solubilized Fe was in the form of low-mol.-wt. (<5-kilodalton) ferrihydrite fragments.

L4 ANSWER 63 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:172087 CAPLUS
DN 110:172087
TI Comparison of in vitro, animal, and clinical determinations of iron bioavailability: International Nutritional Anemia Consultative Group Task Force report on iron bioavailability
AU Forbes, Allan L.; Adams, Catherine E.; Arnaud, Maurice J.; Chichester, C. O.; Cook, James D.; Harrison, Bertha N.; Hurrell, Richard F.; Kahn, Samuel G.; Morris, Eugene R.; et al.
CS Food Drug Adm., Washington, DC, 20204, USA
SO Am. J. Clin. Nutr. (1989), 49(2), 225-38
CODEN: AJCNAC; ISSN: 0002-9165
DT Journal
LA English
AB Relative bioavailability of 2 Fe fortificants, electrolytic Fe and ferric orthophosphate, was related to that of the ref. **ferrous sulfate** with in vitro and rat model depletion-repletion methods in 4 labs. to compare values directly with those obtained in a parallel human study. In vitro testing was performed on Fe compds. with both soly. and **dialysis** in a simulated in vitro gastrointestinal digestion system. Two depletion-repletion techniques, Hb-regeneration efficiency (HRE) and an official method (AOAC), were examd. AOAC relative biol. values (RBV) of electrolytic Fe were 0.66 and 0.78 and of FePO4 were 0.25 and 0.34. HRE values were 0.78 and 0.58 for electrolytic Fe and FePO4, resp. When compared with FeSO4 in a radiolabeled farina-based meal fed to humans, the RBV of FePO4 was 0.25 and electrolytic Fe 0.75. Results obtained with the AOAC method serve as the most reliable prediction of Fe bioavailability in the human although in vitro **dialysis** is a promising screening technique.

L4 ANSWER 64 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1989:45599 CAPLUS
DN 110:45599
TI Electrodialysis apparatus
IN Parsi, Edgardo J.; Sims, Keith J.; Goldstein, Arthur L.
PA Ionics, Inc., USA
SO Fr. Demande, 44 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2608174	A1	19880617	FR 1987-15073	19871030
PRAI	US 1986-941975		19861215		

AB An electrodialyzer for demineralization, concn., and/or metathesis has a multiplicity of electrolytically conductive membranes having between them a multiplicity of electrodialysis compartments and reversible electrode means at each end of the compartments, each electrode means having an elec. conductor and an aq. electrolysis soln. The current yield for prodn. of O2, CO2, CO, and Cl2 is .gtoreq.50% at the anode. A soln. contg. Na+ 360, Ca2+ 112, Mg2+ 27, Cl- 515, SO42- 335, HCO3- 104, and SiO2 45 mg/L at pH 7.2 was demineralized in a 20-cell-pair app. with electrodes of agglomerated Cu powder and Selemion AAV anion-selective membranes.

L4 ANSWER 65 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1988:607711 CAPLUS
DN 109:207711
TI Ultrastructural localization of sulfate glycoconjugates in the human glomerular capillary wall using the high iron diamine method
AU Barsotti, P.; Malchiodi Albedi, F.; Fabrizi, E.; Marinozzi, V.
CS Dip. Biopatol. Umana, Univ. La Sapienza, Rome, Italy
SO J. Submicrosc. Cytol. Pathol. (1988), 20(3), 549-56
CODEN: JSCPEE
DT Journal
LA English
AB The distribution of fixed anionic sites within glomerular capillary walls has been studied in man by applying 2 ultrastructural histochem. methods, i.e., the high Fe diamine and **dialyzed** colloidal Fe methods, to tissue chopper sections and to isolated glomeruli obtained from surgical fragments of renal tissue. By using the high Fe diamine method, it was demonstrated that in man, there are sulfate (possibly heparan sulfate proteoglycan) sites preferentially located in the lamina rara esterna of the basement membrane and in the cell coat of the urinary surface of podocytes. Non-sulfate (high Fe diamine-neg., **dialyzed** colloidal Fe-pos.) anionic sites have been identified not only in the glycocalyx of the epithelial and endothelial cells but also in the laminae rarae of the basement membranes, where they show a more extensive distribution pattern than sulfate sites. The proposed methods seem particularly suitable for the study of human renal tissue; they could, in fact, provide useful information about the behavior of the various anionic components of the glomerular capillary wall in pathol. conditions.

L4 ANSWER 66 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1988:508805 CAPLUS
DN 109:108805
TI Mitochondrial iron loss from leukemia cells injured by macrophages. A possible mechanism for electron transport chain defects
AU Wharton, Melinda; Granger, Donald L.; Durack, David T.
CS Med. Cent., Duke Univ., Durham, NC, 27710, USA
SO J. Immunol. (1988), 141(4), 1311-17
CODEN: JOIMA3; ISSN: 0022-1767
DT Journal
LA English
AB Activated macrophages inhibit replication of murine lymphoblastic leukemia L1210 cells without lysis. This inhibition of replication is assocd. with abnormalities of mitochondrial electron transport at the level of NADH dehydrogenase (NADH-DH) and succinate dehydrogenase (SDH). Because both NADH-DH and SDH contain numerous iron-sulfur clusters, damage to these structures may be one result of injury by activated macrophages. L1210 cells were labeled with 55Fe and co-cultivated with activated murine **peritoneal** macrophages (injured L1210 cells). At 48 h, injured L1210 cells had released 83% of 55Fe into the media, compared with 25% release from control and 37% from nondividing mitomycin C-treated control cells. 55Fe activity was similarly decreased in both mitochondrial and nonmitochondrial fractions of injured L1210 cells. There was selective loss of 55Fe activity in the area of the gel corresponding to SDH and NADH-DH in mitochondria, suggesting that iron loss from iron-sulfur clusters may occur in L1210 cells injured by activated macrophages. L1210 cells in contact with macrophages appear to develop an iron-depleted state, which is dependent on the continued presence of macrophages.

L4 ANSWER 67 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1987:125875 CAPLUS

DN 106:125875
TI Preparation of chitosan derivative-ferrous ion complexes for the treatment of iron deficiency.
IN Marinoni, Vito; Conti, Franco
PA Etablissement Texcontor, Switz.
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 194497	A2	19860917	EP 1986-102379	19860224
	EP 194497	A3	19880316		
	R: CH, DE, FR, GB, LI				
	ES 552951	A1	19870516	ES 1986-552951	19860313
	US 4810695	A	19890307	US 1986-861706	19860512
	JP 63254102	A2	19881020	JP 1986-127125	19860530
	JP 02040242	B4	19900911		
PRAI	IT 1985-19916		19850314		
	EP 1986-102379		19860224		

AB Chitosan derivs. in the form of coordinated complexes with Fe2+, useful in the treatment of Fe deficiency, comprise chitosan 6-O-sulfates I (n = 250-2300), in the form of complexes in which coordinate bonds are established between Fe2+ and the 2-NH2 and 3-OH groups in the glucosamine ring. Chitosan (mol. wt. 350,000, an 80% degree of acetylation, 100 g) is dissolved in 500 mL 2 vol.% HCO2H at ambient temp. and mixed with 50 mL FeSO4 soln. (330 g/L) to obtain a soln. with pH 2.5 which is kept under agitation at 25.degree. for 16 h. The chitosan reaction product is isolated, washed, dried at 40.degree. under vacuum, then dispersed in 400 mL of anhyd. DMF, treated with 7.6 g SO3-pyridine complex at 1.degree. for 40 min and ambient temp. for 35 h, neutralized with NaHCO3, **dialyzed** against H2O to remove org. base and inorg. salts, isolated, and dried to give a chitosan-Fe complex with 0.9 degree of substitution of sulfate groups and 9% Fe content. Healthy subjects were given this chitosan-Fe complex and FeSO4, each labeled with a different Fe isotope, and it was shown that the gastrointestinal absorption of Fe from the chitosan complex was considerably greater than that from FeSO4.

L4 ANSWER 68 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1987:31271 CAPLUS
DN 106:31271
TI Unmasking and redistribution of lysosomal sulfated glycoconjugates in phagocytic polymorphonuclear leukocytes
AU Parmley, Richard T.; Doran, Terence; Boyd, Reginald L.; Gilbert, Charles
CS Health Sci. Cent., Univ. Texas, San Antonio, TX, 78284, USA
SO J. Histochem. Cytochem. (1986), 34(12), 1701-7
CODEN: JHCYAS; ISSN: 0022-1554
DT Journal
LA English
AB Rabbit heterophil and human neutrophil primary granules contain sulfated glycosaminoglycans and acid phosphatase, which can be readily stained in immature but not mature lysosomes. To det. whether this loss of staining represents masking of reactive components or removal of these components, rabbit heterophils were examd. to see if high-**iron** diamine (HID)-reactive **sulfate** and acid phosphatase staining reappears in phagocytic vacuoles. Rabbit heterophils, obtained by **peritoneal** lavage, were incubated in vitro with latex beads or Pseudomonas aeruginosa for 15-60 min. Pre-embedment HID staining was

enhanced in thin sections of unosmicated specimens with thiocarbohydrazide and silver proteinate (TCH-SP). Phagocytosis of latex beads or bacteria was progressively more prominent with time. Primary granules that were degranulated or in the process of degranulating into phagocytic vacuoles demonstrated intense sulfate staining with large (13 nm) HID-TCH-SP stain deposits. Smaller (6 nm) HID-TCH-SP stain deposits were present in tertiary granules, which were less frequently obsd. degranulating into phagosomes. Acid phosphatase staining was most intense during early phagolysosome formation. HID-TCH-SP staining was also obsd. in extracellular degranulated lysosomal matrixes and on the surface of many **peritoneal** heterophils. Apparently, the loss of sulfate staining in mature heterophil granules is the result of masking by intragranular substances rather than of removal, and these components may be unmasked during phagocytosis and/or redistributed to the cell surface after exocytosis.

L4 ANSWER 69 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1986:586228 CAPLUS
DN 105:186228
TI A comparison of two procedures used for complexing iron(III) with human apotransferrin: I. Physicochemical properties of the Fe(III).cntdot.transferrin products
AU Berry, Leslie R.; Hatton, Mark W. C.
CS Dep. Pathol., McMaster Univ., Hamilton, ON, L8N 3Z5, Can.
SO Biochem. Cell Biol. (1986), 64(9), 936-45
CODEN: BCBIEQ
DT Journal
LA English
AB Samples of human Fe.cntdot.transferrin (Fe.cntdot.HTr) were prepd. from a single batch of apotransferrin (apo.cntdot.HTr) by either the Fe(III)-citrate or the Fe(II)-ceruloplasmin (ferroxidase) method. By using 55Fe, 55Fe.cntdot.HTr prepd. by the citrate method and 55Fe.cntdot.HTr prepd. by the ceruloplasmin method contained 2.2-2.3 and 2.0 Fe/mol, resp. For both 55Fe.cntdot.HTr prepns., the isotope was shown to be assocd. with the protein by measurement of absorbance at 465 nm and **dialysis** studies. However, passage of the 55Fe.cntdot.HTr (ceruloplasmin) reaction mixt. through DEAE-cellulose caused 55-60% of 55Fe to be lost from the protein, although no decrease in absorbance at 465 nm was obsd. Ion-exchange chromatog. of 55Fe.cntdot.HTr (citrate) did not induce loss of 55Fe. Absorbance measurements showed significant differences between the 2 Fe.cntdot.HTr prepns. with respect to the ratios A212/A278 and A463/A278 (where A is absorbance of the wavelength indicated by the subscript). At an excitation wavelength of 275 nm, the fluorescence intensity ratios relative to apo-HTr were 0.275 and 0.309 for Fe.cntdot.HTr (citrate) and Fe.cntdot.HTr (ceruloplasmin), resp. ESR measurements confirmed that Fe.cntdot.HTr (cerulplasmin) were satd. with Fe. Hyperfine coupling consts. and other features of the resonance profile revealed distinct differences between the 2 FeHTr prepns. The ESR profile of Fe.cntdot.HTr (citrate), after **dialysis** against H2O, was reduced to multiple splittings and a lack of resoln. of the central hyperfine structure. Addn. of Na2CO3 restored the absorbance (465 nm) and the ESR pattern of Fe.cntdot.HTr (citrate). In contrast, these properties of Fe.cntdot.HTr (cerulplasmin) were little affected by **dialysis** against H2O. However, the addn. of Na3 citrate to Fe.cntdot.HTr (cerulplasmin) caused a redn. in absorbance at 465 nm and a change in ESR profile to resemble that of Fe.cntdot.HTr (citrate) after **dialysis** in H2O; these changes, caused by citrate binding to Fe.cntdot.HTr (ceruloplasmin), were restored to normal by the addn. of Na2CO3. Apparently, different protein conformations result from complexing Fe(III)

with apo.cntdot.HTr by the 2 different procedures. The 2 Fe.cntdot.HTr products may conceivably differ in their abilities to transfer Fe to cells.

L4 ANSWER 70 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1986:495910 CAPLUS
DN 105:95910
TI Lactoferrin: affinity purification from human milk and polymorphonuclear neutrophils using monoclonal antibody (II 2C) to human lactoferrin, development of an immunoradiometric assay using II 2C, and myelopoietic regulation and receptor-binding characteristics
AU Broxmeyer, Hal E.; Bicknell, David C.; Gillis, Steven; Harris, Eugenie L.; Pelus, Louis M.; Sledge, George W., Jr.
CS Sch. Med., Indiana Univ., Indianapolis, IN, 46223, USA
SO Blood Cells (1986), 11(3), 429-46
CODEN: BLCEDD; ISSN: 0340-4684
DT Journal
LA English
AB In order to further clarify the myelopoietic suppressive activity of lactoferrin (LF) in vitro. The recently produced and purified neutralizing antibody (II 2C) to LF was used to set up an immunoradiometric assay specific for LF and to affinity purify LF from lysates of peripheral blood polymorphonuclear neutrophils (PMN) obtained from healthy donors. Fe-satd. purified PMN LF was as active as Fe-satd. affinity purified milk LF as a suppressor of the release of granulocyte-macrophage colony stimulating factors (GM-CSF) from mononuclear human peripheral blood leukocytes. The activities of both the PMN LF and milk LF were inactivated by preincubation with monoclonal II 2C. In order to evaluate the methods of Fe satn. of LF in vitro as measures of their functional activities, milk LF was Fe satd. by 4 different methods, including **ferric citrate**, **ferric** ammonium **sulfate**, **ferric** chloride with nitriloacetate, and **ferric** chloride alone. The functional characteristics of all 4 prepns. of LF satd. with Fe in vitro were relatively equal and were more active than native LF. Resident mouse **peritoneal** macrophages sepd. into subpopulations of GM-CSF-producing cells by velocity sedimentation were evaluated for their LF-receptor binding capacity and for sensitivity to the suppression of GM-CSF release by LF. Fe-satd. LF suppressed release of GM-CSF from only those fractions contg. LF-receptor bearing cells, although not all fractions contg. cells bearing receptors for LF responded to the suppressive activity of LF. Thus, PMN-derived LF exhibits myelopoietic regulatory activity in vitro, which is mediated through populations of mononuclear phagocytes having receptors for LF.

L4 ANSWER 71 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1985:522070 CAPLUS
DN 103:122070
TI Availability to rats of iron in ferric hydroxide polymers
AU Berner, Louise A.; Miller, Dennis D.; Van Campen, Darrell
CS New York State Coll. Agric. Life Sci., Cornell Univ., Ithaca, NY, 14853, USA
SO J. Nutr. (1985), 115(8), 1042-9
CODEN: JONUAI; ISSN: 0022-3166
DT Journal
LA English
AB Availability to rats of Fe in isolated ferric hydroxide polymers was assessed. Polymers were prepd. by hydrolyzing a 59Fe(NO3)3 soln. with base (KHCO3). After isolation by gel filtration, the polymers were

characterized by spectrophotometric, **dialysis**, and ultracentrifugation methods. In a split-plot design expt., Fe-adequate (Hb 11.4-14.0 g/dL) or Fe-deficient (Hb 4.7-9.6 g/dL) male Sprague-Dawley rats (10/treatment) were dosed by stomach tube with one of the following 59Fe-labeled solns.: polymers, Fe(NO3)3 (low-mol.-wt. control), polymers + citrate [77-92-9], or Fe(NO3)3 + citrate. As expected, Fe-deficient animals absorbed more Fe than adequate animals. There was no difference in absorption of Fe between polymers and low-mol.-wt. control doses. In Fe-adequate animals, citrate significantly depressed the uptake of Fe both from Fe(NO3)3 and polymers. These results indicate that polymn. of Fe species prior to ingestion is not a likely means by which Fe is rendered unavailable and that the effect of citrate on Fe absorption may depend on the Fe status of the animal.

L4 ANSWER 72 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1985:114820 CAPLUS
DN 102:114820
TI Anion-exchange membrane
PA Nippon Oil Seal Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59202227	A2	19841116	JP 1983-75575	19830428
	JP 03015663	B4	19910301		

AB Anion exchange membranes useful in diffusion **dialysis** are prepd. by crosslinking plasma-treated fluoropolymer porous membrane supports with polyamines and coating with polymers contg. functional groups which can be aminated to give quaternary ammonium groups. Thus, an asym. porous membrane prepd. from poly(vinylidene fluoride) [24937-79-9] and polyethylene glycol was treated with plasma (13.56 MHz, 50 W, 1 min) and then soaked in 50% aq. N,N,N',N'-tetramethyl-1,6-hexanediamine (I) [111-18-2] soln. The polyamine-crosslinked support was soaked in a CCl4 soln. of chloromethylstyrene-styrene copolymer [54786-26-4], dried, soaked again in aq. I, and washed to give an anion-exchange membrane which was set in a two-chamber **dialysis** cell. In **dialysis** of a mixt. of 2N H2SO4 and 1N FeSO4, the **dialysis** rate ratio of H2SO4 and H2SO4 + FeSO4 was 220, vs. 43 for a membrane prepd. without the plasma treatment.

L4 ANSWER 73 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1984:421079 CAPLUS
DN 101:21079
TI Ferritin biosynthesis in macrophages (M.vphi.s)
AU Ono, Toshiro; Tsujii, Tadashi; Seno, Satimaru
CS Div. Pathol., Shigei Med. Res. Inst., Okayama, 701-02, Japan
SO Struct. Funct. Iron Storage Transp. Proteins, Proc. Int. Conf., 6th (1983), 133-6. Editor(s): Urushizaki, Ichiro; Aisen, Philip; Listowsky, Irving. Publisher: Elsevier, Amsterdam, Neth.
CODEN: 51RVAG
DT Conference
LA English
AB Rat **peritoneal** macrophages took up **ferric** hydroxide-polyvinyl **sulfate** complexes rapidly, then synthesized ferritin in phagolysosomes. The ferritin then was dispensed into the cytoplasmic matrix.

L4 ANSWER 74 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1984:32588 CAPLUS
DN 100:32588
TI A morphological study of ferritin synthesis in macrophages with ingested **ferric** hydroxide-potassium polyvinyl **sulfate** complexes
AU Ono, Toshiro; Tsujii, Tadashi; Seno, Satimaru
CS Div. Pathol., Shigei Med. Res. Inst., Okayama, 701-02, Japan
SO Cell Struct. Funct. (1983), 8(3), 267-79
CODEN: CSFUDY; ISSN: 0386-7196
DT Journal
LA English
AB A Fe(OH)3-polyvinyl sulfate colloidal soln. (Fe-PVS), prepd. by mixing K polyvinyl sulfate (PVSK) and Fe(OH)3 colloidal soln. was used to study ferritin synthesis in rat **peritoneal** macrophages. The colloidal particles had spherical electron-opaque Fe(OH)3 cores with diams. of .apprx.250 nm surrounded by radially arranged fibrous PVS mols. They also had strong neg. elec. charges. Fe-PVS particles injected into the **peritoneal** cavity were taken up by the macrophages and then disintegrated rapidly. In the phagolysosomes, the electron-opaque Fe(OH)3 cores of Fe-PVS were denuded of their PVS frames then decompd. into small 5-6-nm granules 24-48 h after injection. These small granules were released from the lysosomes into the hyaloplasm, and the myelin figures were found in the lysosomal vacuoles. No reaccumulation of granules in lysosomes was found even 3 mo later. The pattern of intracellular distribution of ferritin in macrophages was similar to that of the small granules formed by the disintegration of Fe-PVS. Thus, in rat **peritoneal** macrophages that contain ingested Fe-PVS particles ferritin is synthesized in phagolysosomes from the Fe(OH)3 cores that conjugate with apoferritin or protein subunits, and then they are dispersed into the cytoplasm. Two possible pathways for the biosynthesis of ferritin are discussed.

L4 ANSWER 75 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1982:543135 CAPLUS
DN 97:143135
TI Lipopolysaccaride containing compounds as immunotherapeutic agent for tumors
IN Maruyama, Chisato
PA Japan
SO Brit. UK Pat. Appl., 10 pp.
CODEN: BAXXDU
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2088399	A	19820609	GB 1980-38164	19801128

AB A lipopolysaccharide tumor inhibitor is produced by fermn. with Mycobacterium tuberculosis. Thus, M. tuberculosis ATCC 31726 was cultured for 14 days in a medium contg. asparagine 4, KH2PO4 0.5, **citrate** 2, MgSO4 0.5, ammonium **ferric citrate** 0.05, and glycerol 60 g/L. The bacteria were boiled for 2 h, protein was pptd. from the ext., and the supernatant was treated by **dialysis**, EtOH pptn., and chromatog. to purify the lipopolysaccharide. The lipopolysaccharide has an av. mol. wt. of .apprx.13,000; it consists of an arabinomannan [53026-40-7] (mol. wt. .apprx.11,000) consisting of .apprx.47 arabinose and .apprx.30 mannose units to which .apprx.8 fatty acid residues, mostly palmitate [57-10-3], are bound.

L4 ANSWER 76 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1982:158772 CAPLUS
DN 96:158772
TI Clonal growth of normal human epidermal keratinocytes in a defined medium
AU Tsao, Mary C.; Walthall, Ben J.; Ham, Richard G.
CS Dep. Mol. Cell. Dev. Biol., Univ. Colorado, Boulder, CO, 80309, USA
SO J. Cell. Physiol. (1982), 110(2), 219-29
CODEN: JCLLAX; ISSN: 0021-9541
DT Journal
LA English
AB Colony formation by normal human epidermal keratinocytes (HK) was achieved in a medium that contains no deliberately added undefined supplements. The term defined is used to describe this medium, although the possibility that trace contaminants in its components could be contributing to the multiplication that it supports cannot be ruled out. The defined medium consists of a basal medium, MCDB 152, supplemented with 5 ng/mL epidermal growth factor (EGF), 10 .mu.g/mL transferrin, 5 .mu.g/mL insulin, 1.4 .times. 10-6 M hydrocortisone, 1.0 .times. 10-5 M ethanolamine, 1.0 .times. 10-5 M phosphoethanolamine, and 2.0 .times. 10-9 M progesterone. MCDB 152 differs from MCDB 151, previously developed for multiplication of HK with small amts. of **dialyzed** serum (Peehl and Ham, 1980b), only by addn. of the trace element mixt. from human fibroblast medium MCDB 104 (McKeehan et al., 1977). Most of the requirement for transferrin, which is the least defined component of the defined medium, can be replaced by adding freshly dissolved and sterilized FeSO4 to the final medium after it has been filter sterilized. Insulin and EGF are clearly needed for optimal multiplication and hydrocortisone is mildly beneficial. Either ethanolamine or phosphoethanolamine must be present in the defined medium for HK multiplication. There is a greater need for EGF and less for hydrocortisone in the defined medium than in previous partially defined systems. Very large colonies of flattened epithelial cells are obtained in the defined medium, which has a low Ca concn. (0.03 mM) and does not favor keratinocyte differentiation. Less growth and more differentiation are obtained with higher Ca concns. The defined medium is highly selective for keratinocyte growth from a mixed inoculum of keratinocytes and fibroblasts.

L4 ANSWER 77 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1981:530970 CAPLUS
DN 95:130970
TI Anticarcinogenic substances
PA Mitsui Toatsu Chemicals, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56032493	A2	19810401	JP 1979-108592	19790828

AB Anticarcinogenic substances are produced by rupturing Nocardia cells, adding coagulants to the cell-free exts., and recovering the resulting ppts. Thus, N. asteroides R 399 was cultured on an aq. broth (pH 7.2) of meat ext. 12, K2HPO4 0.5, **citric** acid 2, MgSO4 0.5, **ferric** ammonium **citrate** 0.05, and glycerol 60 g/L for 30 days at 30.degree.. The broth was centrifuged, the collected cells (200 g) ruptured, centrifuged, 0.6 g streptomycin sulfate added to 200 mL the cell-free exts., the resulting ppt. **dialyzed** against 10 mM pH

7.0 phosphate buffer and H2O, and then lyophilized to give 940 mg of substance N-N-1 [78769-19-4]. N. corallina IFO 3338 was also used.

L4 ANSWER 78 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1981:530968 CAPLUS
DN 95:130968
TI Anticarcinogenic substances
PA Mitsui Toatsu Chemicals, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56032490	A2	19810401	JP 1979-108589	19790828

AB Anticarcinogenic and adjuvant substances are produced by disrupting Mycobacterium cells, adding coagulants to the cell-free exts., heating the resulting ppts. in aq. media, and recovering the H2O-sol. fractions. Thus, Mycobacterium bovis BCG strain Japan was cultured on an aq. broth of meat ext. 20, K2HPO4 0.5, **citric** acid 2, **ferric** ammonium **citrate** 0.05, MgSO4 0.5, and glycerol 60 g/L for 4 wk at 37.degree.. The cells (3 kg) were collected, ruptured in 10 mM pH 7.0 phosphate buffer, centrifuged, 48 g streptomycin sulfate added, the ppt. isolated, **dialyzed** in cellophane bags against 10 mM pH 7.0 phosphate buffer and H2O, heating for 60 min at 80.degree., and the supernatant lyophilized to leave 760 mg substance NHS-1 [78769-18-3]. M. smegmatis ATCC 607 was also used.

L4 ANSWER 79 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1981:513371 CAPLUS
DN 95:113371
TI Anticarcinogenic substances
PA Mitsui Toatsu Chemicals, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56032491	A2	19810401	JP 1979-108590	19790828
JP 60037120	B4	19850824		

AB Anticarcinogenic and adjuvant substances are produced by rupturing Mycobacterium cells, adding coagulants to the cell-free exts., and recovering H2O-sol. fractions from the resulting ppts. Thus, M. bovis BCG strain Japan was cultured on an aq. broth of meat ext. 20, K2HPO4 0.5, **citric** acid 2, **ferric** ammonium **citrate** 0.05, MgSO4 0.5, and glycerol 60 g/L for 4 wk at 37.degree.. The cells (3 kg) were then collected, ruptured in 10 mM pH 7.0 phosphate buffer, centrifuged, 48 g streptomycin sulfate added, the ppt. isolated, **dialyzed** in cellophane bags against 10 mM pH 7.0 phosphate buffer and H2O, the resulting suspension centrifuged, and the supernatant chromatographed over Sepharose 4B in 0.5 M NaCl to give 33 mg of substance NA-1 [78769-15-0].

L4 ANSWER 80 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1981:440858 CAPLUS
DN 95:40858

TI Anticarcinogenic substances
PA Mitsui Toatsu Chemicals, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56032489	A2	19810401	JP 1979-108588	19790828

AB Anticarcinogenic and adjuvant substances are produced by rupturing Mycobacterium cells, addn. of coagulants to the cell-free exts., and heating the resulting ppts. in aq. media. Thus, M. bovis BCG strain Japan was cultured on an aq. broth of meat ext. 20, K2HPO4 0.5, **citric** acid 2, **ferric** ammonium **citrate** 0.05, MgSO4 0.5, and glycerol 60 g/L for 4 wk at 37.degree., the cells (3 kg) were collected, ruptured in 10 mM pH 7.0 phosphate buffer, centrifuged, 48 g streptomycin sulfate added, the ppt. isolated, **dialyzed** in cellophane bags against 10 mM pH 7.0 phosphate buffer and H2O, heated for 60 min at 80.degree., and lyophilized to give substance NH. M. tuberculosis H37Ra and M. smegmatis ATCC 607 were also used.

L4 ANSWER 81 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1981:117532 CAPLUS
DN 94:117532
TI Energy-independent uptake of **iron** from **citrate** by isolated outer membranes of Neisseria meningitidis
AU Simonson, Catherine; Trivett, Terrence; DeVoe, I. W.
CS Dep. Microbiol. Immunol., McGill Univ., Montreal, PQ, H3A 2B4, Can.
SO Infect. Immun. (1981), 31(2), 547-53
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB CN--poisoned N. meningitidis SD1C cells rapidly took up 55Fe from Fe-citrate complexes during the 1st 2 min, after which no further Fe was accumulated. Citrate-14C was not taken up concomitantly with 55Fe by these cells. The 55Fe taken up by the poisoned cells was found in the membrane fraction after the cells were broken; 70% of the radioactivity was distributed in the outer membrane and 30% was in the inner membrane. Isolated outer membranes from Fe-starved cells were as capable of Fe uptake from citrate as intact cells were. As with whole cells, citrate-14C was not taken up by isolated outer membranes. A polyacrylamide gel electrophoresis anal. of the proteins from citrate-**dialyzed** outer membranes after the uptake of 55Fe revealed that the radioactivity was assocd. with a major band of 36,500 mol. wt.

L4 ANSWER 82 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1980:65543 CAPLUS
DN 92:65543
TI Thermodynamics of binding of configurationally different iron(III) complex ions by sodium dextran sulfate in aqueous solution
AU Pispisa, B.; Paoletti, S.
CS Ist. Chim. Fis., Univ. Roma, Rome, Italy
SO J. Phys. Chem. (1980), 84(1), 24-8
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB The binding process between Na dextran sulfate (NaDS) and pseudo-octahedral trans- and cis-Fe(III) complexes with quaterpyridine

(tetpy) or bis(methylpyridyl)ethylenediamine (bmen) of pH .apprx.7.5 and 5.7, was studied by equil. **dialysis**, phase-sepn., and calorimetric measurements. Equil. **dialysis** data show that the affinity of NaDS for the complex counterions follows the order. Equil **dialysis** data show that the affinity of NaDS for the complex counterions follows the order trans-[Fe(tetpy)(OH)2]+ > cis-[Fe(bmen)(H2O)(OH)]2+ > cis-[Fe(bmen)(OH)2]+. Phase-sepn. expts. indicate, however, that [Fe(bmen)(H2O)(OH)]2+-NaDS system experiences a less intimate assocn. process than does the [Fe(bmen)(OH)2]+-NaDS system, owing to the higher charge d. of the aquahydroxo species. Calorimetric results support the conclusion that the trans[Fe(tetpy)(OH)2]+ compd. forms the most stable and specific assocn. complex with NaDS, the process being entirely entropy driven. Mol. models are consistent with the overall findings in that they suggest that the trans topol. of [Fe(tetpy)(OH)2]+ makes a close approach of the ions to the polymeric substrate less crowded than the cis configuration, thus allowing specific interactions which very likely involve also the tetrapyridyl ligand and hydroxylic groups of the polysaccharide chain.

L4 ANSWER 83 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1979:471274 CAPLUS
DN 91:71274
TI Ultrastructural localization of **sulfated** complex carbohydrates with a modified **iron** diamine procedure
AU Sannes, Philip L.; Spicer, Samuel S.; Katsuyama, Tsutomu
CS Dep. Pathol., Med. Univ. South Carolina, Charleston, SC, 29403, USA
SO J. Histochem. Cytochem. (1979), 27(7), 1108-11
CODEN: JHCYAS; ISSN: 0022-1554
DT Journal
LA English
AB A thiocarbohydrazide-Ag-proteinate (TCH-SP) sequence was applied to thin sections of specimens that had been reacted with the high Fe diamine (HID) method for ultrastructural localization of sulfated complex carbohydrates. The exposure to TCH-SP enhanced the electron opacity of HID-reactive sites and increased the sensitivity of the procedure. This held true for HID-reacted specimens whether or not they had been post-treated with OsO4. However, in those not postosmicated after HID, the contrast and specificity appeared superior, as sites of osmiophilia were densified equally in specimens exposed to HID, and unexposed controls, by the final OsO4-TCH-SP sequence. Staining of immature granules of developing polymorphonuclear neutrophils by HID was intensified by the post-treatment with TCH-SP. In addn., granules of blood mononuclear leukocytes and heterophagosomes of **peritoneal** macrophages revealed HID affinity and hence content of sulfated mucosubstance that was not evident without the TCH-SP steps. Control procedures which entailed initial exposure of the specimen to FeCl3 or MgCl2 solns. and treatment of thin sections with TCH-SP failed to impart d. to these sites.

L4 ANSWER 84 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1979:402080 CAPLUS
DN 91:2080
TI Measurement of total iron-binding capacity with a centrifugal analyzer
AU Sharpe, Lesley A.; Delaney, Kathleen K.; Breakell, Edward S.; Richar, Walter J.; Siegel, Lewis
CS Dep. Lab., Stamford Hosp., Stamford, CT, 06902, USA
SO Clin. Chem. (Winston-Salem, N. C.) (1979), 25(4), 640-1
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English

AB The detn. of the total Fe-binding capacity of serums from patients whose serum Fe ranged from Fe deficiency to Fe excess was performed with a centrifugal analyzer by a modified method of J. A. O'Malley, et al. (1970). The method involves diln. of the serum sample with tris contg. **ferric** ammonium **sulfate** (pH 8.5), incubation for 5 min at room temp., and measurement of absorbance at 600 nm. 2,4,6-Tripyridyl-s-triazine is added, and the absorbance again measured at 600 nm. The total Fe-binding capacity is calcd. as the difference of the 2 measurements. The method had a within-run precision of 4.5% and a between-run precision of 5.5%. The method is rapid and accurate, and does not require **dialysis** or protein pptn.

L4 ANSWER 85 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1979:191847 CAPLUS
DN 90:191847
TI Waste gas scrubbing
IN Shiraishi, Masahiko; Okamura, Masahiro; Ono, Shigeyoshi; Ninomiya, Keiji
PA Idemitsu Kosan Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53034678	A2	19780331	JP 1976-109459	19760914
JP 59049049	B4	19841130		

AB A waste gas is scrubbed with a soln. contg. Fe2+, SO32- and/or HSO-3, and alkanolamine, then the spent soln. is regenerated by electrodialysis using a cation exchange membrane. The anolyte from the **dialysis** is maintained at pH <2. The oxidized Fe in the spent soln. is reduced and the soln. recycled for NOx and/or SOx removal. Thus, He-2% NO gas mixt. was scrubbed with a soln. contg FeSO4 300, diethanolamine [111-42-2] 2700, SO32- 800 mmol/L, and H2SO4 (for pH adjustment to 7.2). The spent soln. was electrodialyzed to reduce 86% of Fe3+. Imidosulfonate was hydrolyzed. The anolyte contg. sulfamic acid was hydrolyzed to NH4+ and SO42-, and the hydrolyzed anolyte was treated with NaOH to prep. NH3.

L4 ANSWER 86 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1979:35506 CAPLUS
DN 90:35506
TI 5-Amino-1-formylisoquinoline thiosemicarbazone, an inhibitor of ribonucleotide reductase
AU Sartorelli, Alan C.; Agrawal, Krishna C.; Moore, E. Colleen
CS Comprehensive Cancer Cent., Yale Univ. Sch. Med., New Haven, Conn., USA
SO Nucleic Acid Chem. (1978), Volume 2, 945-54. Editor(s): Townsend, Leroy B.; Tipson, R. Stuart. Publisher: Wiley, New York, N. Y.
CODEN: 39GCA6
DT Conference
LA English
AB A modified procedure for the assay of ribonucleoside diphosphate reductase inhibition by 5-amino-1-formylisoquinoline thiosemicarbazone (I) is described. Cells are homogenized or sonicated and the resulting homogenate or sonicate is centrifuged and either **dialyzed** or passed through Dowex-1 (Cl-) to remove inhibitory nucleotides. The activity is measured by incubation of enzyme ext. for 30 min at 37.degree. with 8.3 mM K phosphate buffer (pH 7), 4.2 mM Mg(OAc)2, 40 .mu.M **ferrous** ammonium **sulfate**, 6.3 mM 1,4-dithiothreitol, and the appropriate substrate (CDP-32P) and activator in a total reaction vol.

of 120 .mu.L. The reaction is started by addn. of substrate and stopped by addn. of 1M perchloric acid or boiling for 3 min. The appropriate carrier (dCMP) is added, pptd. protein is removed by centrifugation, and the supernatant is heated in boiling water for 15 min to hydrolyze di- and triphosphates. After neutralization and removal of perchlorate, the supernatant is fractionated on Dowex-50 (H+) and the radioactive dCMP eluted with 0.2M HOAc is measured in a scintillation spectrometer. Activators which can be used are: 0.33 mM UDP + 2.1 mM ATP, 0.3 mM GDP + 0.4 mM ATP + 0.1 mM dTTP, and 0.5 mM ADP + 2 mM GTP. I is conveniently dissolved in Me2SO at a concn. of .apprx.1 mg/mL, dild. to 1:100 with 10% Me2SO and then dild. to the desired concn. with H2O. The final concn. of Me2SO in the reaction mixt. should not be >1%. The ID50 value may be influenced by the concn. of Fe and chelating agents and the levels of thioredoxin and enzyme in the prepn.

L4 ANSWER 87 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1978:551865 CAPLUS
DN 89:151865
TI Waste gas treatment
IN Shiraishi, Masahiko; Okamura, Masahiro; Ono, Shigeyoshi; Ninomiya, Keiji
PA Idemitsu Kosan Co., Ltd., Japan
SO Japan. Kokai, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53034677	A2	19780331	JP 1976-109458	19760914
	JP 59030454	B4	19840727		

AB A soln. contg. Fe2+, SO32- and/or HSO3-, and alkanolamine is used for waste gas scrubbing. The spent scrubbing soln. is electrodialyzed for reuse in a **dialyzer** contg. an anion exchange membrane. The catholyte is the spent soln. and the anolyte is a halide-contg. soln., i.e. .gtoreq.1 Cl gas, NaCl, KCl, NaBr, or KBr. Thus, a soln. contg. FeSO4.7H2O, diethanolamine [111-42-2], and H2SO4 was used for waste gas scrubbing, then electrodialyzed as above with an H2SO4-NaCl anolyte.

L4 ANSWER 88 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1978:147770 CAPLUS
DN 88:147770
TI Stoichiometric and site characteristics of the binding of iron to human transferrin
AU Aisen, Philip; Leibman, Adela; Zweier, Jay
CS Dep. Biophys., Albert Einstein Coll. Med., Bronx, N. Y., USA
SO J. Biol. Chem. (1978), 253(6), 1930-7
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
AB Stoichiometric or thermodn. equil. consts. for the binding of Fe3+ to transferrin were evaluated by the method of equil. **dialysis** using citrate as a competing complexing agent, near pH 6.7 and near pH 7.4. In each case K1 was substantially greater than K2, the effect being more marked at lower pH. These overall stability consts. for the binding of Fe decrease with increasing pH, but at any pH and pCO2, apparent stability consts. may be defined, and these increase with increasing pH as a result of the inverse dependence of Fe binding on the 4th power of the H+ concn. Using the urea gel electrophoresis method of D.G. Makey and U.S. Seal (1976), relative concns. of the 2 species of monoferric

transferrin were measured in each prepn. at equil. This made it possible to est. the 4 intrinsic site consts. for the binding of Fe to transferrin. A slight neg. cooperativity was evident in the binding of Fe to each site. Although 1 site, designated the a-site, is more strongly binding than the b-site, it is not necessarily more accessible to all complexes of Fe. Thus, Fe as **ferric citrate**, **ferric** oxalate, **ferrous** ammonium **sulfate**, and **ferric** chloride preferentially occupy the b-site when presented to transferrin under conditions in which an equil. distribution of Fe between the binding sites of the protein would not be expected. Fe as ferric nitrilotriacetate, however, is directed toward the a-site. This is also the site which retains Fe at low pH. A difference in EPR spectra of single site transferrins was demonstrated under near physiol. conditions.

L4 ANSWER 89 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1977:172722 CAPLUS
DN 86:172722
TI Poly(vinyl alcohol) hollow fibers and their use as **dialysis** membranes
IN Yamamoto, Kohzo; Kawai, Syuji; Ohmori, Akio
PA Kuraray Co., Ltd., Japan
SO Ger. Offen., 20 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2642245	A1	19770331	DE 1976-2642245	19760920
	DE 2642245	C3	19790426		
	JP 52037830	A2	19770324	JP 1975-113276	19750919
	JP 56052124	B4	19811210		
	US 4071454	A	19780131	US 1976-722024	19760910
	GB 1524429	A	19780913	GB 1976-38470	19760916
	FR 2324337	A1	19770415	FR 1976-28089	19760917
	FR 2324337	B1	19810807		
PRAI	JP 1975-113276		19750919		

AB Homogeneous poly(vinyl alc.) (I) hollow fibers with degree of orientation (.pi.) 60% .ltoreq. .pi. .ltoreq. 98% and degree of swelling (.zeta.) 1.05- .ltoreq. .zeta. leq 1.8-fold are resistant to acids and alkalies, permeable to acids, alkalies, and salts, and have good strength. Bundles of these fibers are used as **dialysis** membranes. Examples describe the prepn. of these fibers and their use in sepg. NaOH from hemicellulose [9034-32-6], H2SO4 from FeSO4, and NaCl from tryptophan [73-22-3], and in concg. apple juice.

L4 ANSWER 90 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1977:157749 CAPLUS
DN 86:157749
TI Homogeneous precipitation of soluble Prussian blue
IN Matsumoto, Yoshio; Kawashima, Takeshi
PA Japan
SO Japan. Kokai, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 52006399 A2 19770118 JP 1975-82606 19750704
JP 55000336 B4 19800107
AB Aq. Fe(III) salt is treated with a chelating agent, then with an equimolar amt. of Fe(CN)64-, and acidified. Thus, Fe(NO3)3.9H2O 4.0(0.01 mol) in H2O 50 g was mixed with citric acid 2.1 in H2O 50, with K2CO3 6.9 in H2O 50, then with K4Fe(CN)6.3H2O 4.2 in H2O 200 g, adjusted to pH 3 with very dil. HNO3, centrifuged or **dialyzed**, and purified with a Sephadex G-50 column. The yield was 2.4 g.

L4 ANSWER 91 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1977:78411 CAPLUS
DN 86:78411
TI Solubility of hydrous ferric oxide and iron speciation in sea water
AU Byrne, Robert H.; Kester, Dana R.
CS Grad. Sch. Oceangr., Univ. Rhode Island, Kingston, R. I., USA
SO Mar. Chem. (1976), 4(3), 255-74
CODEN: MRCHBD
DT Journal
LA English
AB Fe solubility equils. were studied in seawater at 36.22% salinity and 25.degree. using several filtration and **dialysis** techniques. In simple filtration expts. with 0.05.mu.m filters and Millipore ultra-filters, **ferric** chlorides, fluorides, **sulfates**, and FeOH2+ species were insignificant relative to Fe(OH)2+ at p[H+] = -log [H+] greater than 6.0. Hydrous ferric oxide freshly precipitated from seawater yielded a soly. product of *Kso = [Fe3+][H+]-3 = 4.7 .times. 105. Soly. studies based on the rates of **dialysis** of various seawater solns. and on the filtration of acidified seawater solns. indicated the existence of the Fe(OH)30 species. The formation const. for this species is calcd. as *.beta.3 = ([Fe(OH)30][H+]3)/[Fe3+] = 2.4 .times. 10-14. The Fe(OH)4- species is present at concns. which are negligible compared to Fe(OH)2+ and Fe(OH)30 in the normal pH range of seawater. There is at least one other significant ferric complex in seawater above p[H+] = 8.0 (possibly with bicarbonate, carbonate, or borate ions) in addition to the Fe(OH)2+ and Fe(OH)30 species.

L4 ANSWER 92 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1976:425048 CAPLUS
DN 85:25048
TI Ion-exchange membrane as a means for treating waste acid in steel works
CS Shanghai Silicon-Steel Sheet Works, Waste Acid Treatment Group, Shanghai, Peop. R. China; Academia Sinica, Shanghai Institute of Metallurgical Design; Academia Sinica, Shanghai Institute of Organic Chemistry
SO Hua Hsueh Hsueh Pao (1975), 33(1), 7-10
CODEN: HHHPA4
DT Journal
LA Chinese
AB Waste water from Si-steel [11100-68-8] sheet works contg. 200-20 g/l. free H2SO4 and 120-200 g/l. FeSO4 was treated with S-203 [59494-34-7] anion exchange membrane in a **dialysis**-diffusion process to reduce H2SO4 and FeSO4 contents to 20 and 85-120 g/l., resp. The effluent from **dialysis** was further treated with F-201 [59494-10-9] for further redn. of acid and FeSO4 contents.

L4 ANSWER 93 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1975:591254 CAPLUS
DN 83:191254
TI Uptake of ionic iron-55 by mouse **peritoneal** macrophages in vitro
AU Fedorko, Martha E.; Lanni, Carmine

CS Rockefeller Univ., New York, N. Y., USA
SO Exp. Cell Res. (1975), 95(2), 385-95
CODEN: ECREAL
DT Journal
LA English
AB Mouse **peritoneal** macrophages were maintained in vitro up to 3 days and exposed to 55Fe-labeled in the form of **ferrous citrate**, FeSO4, and FeCl3 in concns. of 3-5 .gamma. Fe/ml. The divalent Fe compds. were taken up 10-40 times more extensively per wt. of Fe than the trivalent Fe compds. The net uptake of **ferrous citrate** was linear during the 1st day and thereafter increased at a slower rate. Macrophages in culture for 1 week showed 33% the av. uptake of freshly cultured cells during comparable periods of exposure to **ferrous citrate**. The Fe taken up was used in the synthesis of mouse ferritin. Uptake of **ferrous citrate** was influenced by serum concn. in the tissue culture medium, temp., pinocytosis, and phagocytosis of both latex particles and heated rat erythrocytes. Uptake of **ferrous citrate** was enhanced by exposure to either NaF (5 .times. 10-3M), or 2,4-dinitrophenol (1 .times. 10-5M), but was not affected by cyanide, azide, or cycloheximide. The effect of NaF was not demonstrated when FeSO4 was substituted for **ferrous citrate**. The results reported here suggested that the ability of macrophages to take up **ferrous citrate** is good in freshly explanted cultures, is a temp.-dependent process, is suppressed by pinocytosis and phagocytosis, and paradoxically enhanced by certain metabolic inhibitors.

L4 ANSWER 94 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1975:47436 CAPLUS
DN 82:47436
TI Electro-ion-exchange treatment of the regenerates of ion exchangers. II. Removal of acid from the regenerate of cation exchangers, containing sulfuric acid and nickel, chromium, and **iron sulfates**
AU Bedyukh, G. A.; Anishchenko, I. A.; Lavrova, Z. D.; Cherevkov, V. V.; Ivakina, E. I.
CS USSR
SO Teor. Prakt. Sorbtsionnykh Protsessov (1973), 8, 102-5
CODEN: TPRSBE
DT Journal
LA Russian
AB Elec. current-time, catholyte concn.-time, and anolyte concn.-time relations were studied on solns. contg. H2SO4 1.00, NiSO4 0 and 0.26, Cr2(SO4)3 0 and 0.43, and FeSO4 0 and 0.72 and H2SO4 solns. 1.00-2.18 g equiv/l. The elec. current increased to a max. at 1.6-2.3 hr and then decreased. The value of the max. and the time to reach the max. increased as the concn. increased. The catholyte concn. decreased, the anolyte concn. increased, and the min. resistance in the cell occurred when the specific resistances in each chamber were equal. Increasing the applied voltage increased the value of the max. current and decreased the time to the max. The current was larger in H2SO4 solns. than in sulfate-H2SO4 solns. with the same total concn. The time to increase the H2SO4 concn. to 2 g equiv/l. was increased 2-4 times by the sulfates. The acid yield with respect to the current decreased with time in av. from 45 to 25%, because of decreasing selectivity of the anionic membranes. The elec. energy consumption increased with the time and the applied voltage, was practically independent of the initial catholyte concn., and was higher for the sulfate-H2SO4 solns.

L4 ANSWER 95 OF 225 CAPLUS COPYRIGHT 2002 ACS

AN 1973:516397 CAPLUS
DN 79:116397
TI Electrochemical decoloration of titanium sulfate pulp
AU Chinenko, V. P.; Chefranova, L. B.
CS Khar'k. S.-Kh. Inst. im. Dokuchaeva, Kharkov, USSR
SO Pochvoved. Agrokhim. (1971), 139-41. Editor(s): Grinchenko, A. M. Publisher: Khar'kov. Sel'skokhoz. Inst., Kharkov, USSR. CODEN: 26XYAN
DT Conference
LA Russian
AB An exptl. continuous electrolytic reduction-**dialyzer** was constructed for removing **iron** [7439-89-6] from titanium **sulfate** [18130-44-4] used in the manuf. of titania [13463-67-7] pigment. The cell consisted of a central cathode compartment flanked by 2 anode compartments, sepd. by permeable membranes. The suspension of pulp was fed upward through the anode compartment where Fe3+ were reduced by Ti3+ to Fe2+. Ferrous salts were removed from the pulp by washing. The current d. was at the start of the operation .sim.2 A/dm2, it decreased to .sim.1 A/dm2 in 1 hr and remained const. thereafter. The redn. of the current d. was caused by the electrodeposition of Fe on the cathodes which ceased after their potential was decreased to .sim.0.7 volt.

L4 ANSWER 96 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1973:451091 CAPLUS
DN 79:51091
TI Role of gastric secretion in iron absorption. I
AU Orrego Matte, Hector; Bronfman, Miguel; Kawada, Maria Eugenia; Navia, Erika
CS Dep. Med., Hosp. J. J. Aguirre, Santiago, Chile
SO Rev. Med. Chile (1972), 100(11), 1337-44 CODEN: RMCHAW
DT Journal
LA Spanish
AB The behavior of Fe salts in gastric juice was studied using various techniques. Fe3+ in rat gastric juice did not attain equil. when **dialyzed** at pH 7.0 against normal saline or against gastric juice without Fe. The same effect was obsd. for Fe3+ in saline plus albumin. The Fe3+ retention was somewhat reduced when the gastric juice was deproteinized; it was increased by the addn. of pancreatic secretion but not biliary secretion. Pptn. with CCl3CO2H of proteins from human gastric juice contg. radio-active **ferrous citrate** at pH 1.5, pptd. .apprx.5% of the 59Fe. This was less for **ferrous citrate** in normal saline plus albumin, was minimal with saline plus transferrin, and was insignificant with plain saline. The amt. of 59Fe pptd. increased with an increase in pH to .apprx.80% at pH 4.5. Chromatog. sepn. of 59Fe-contg. gastric juice on Sephadex at pH 7.0 yielded 2 peaks: one of high mol. wt. appearing in the elution vol., and one of lower mol. wt. appearing in later fractions. This latter peak was the only one appearing when the chromatog. was carried out at pH 1.5. These results are the same for Fe3+ as for the Fe2+. Whether Fe3+ or Fe2+ was added to gastric juice in vitro, even at pH 7.0, the resulting soln. contained >50% Fe2+. In gastric juice Fe forms nondialyzable complexes with proteins from this secretion that parallels the effects obtained when Fe is added to albumin-contg. saline. Intestinal absorption of Fe occurs largely in the Fe2+ form and gastric juice might favor such absorption by the formation of low mol. wt. complexes.

L4 ANSWER 97 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1971:459004 CAPLUS

DN 75:59004
TI Metabolism of nicotinic acid. I. Purification and properties of 2,5-dihydroxypyridine oxygenase from Pseudomonas putida N-9
AU Gauthier, Joseph J.; Rittenberg, Sydney C.
CS Dep. Bacteriol., Univ. California, Los Angeles, Calif., USA
SO J. Biol. Chem. (1971), 246(11), 3737-42
CODEN: JBCHA3
DT Journal
LA English
AB The purification and crystn. of an enzyme which catalyzes the oxidn. of 2,5-dihydroxypyridine (I), an intermediate in nicotinic acid (II) catabolism, are described. The labile 2,5-dihydroxypyridine oxygenase was stabilized by dithiothreitol. Activity lost by **dialysis** or purification procedures was restored by incubation with dithiotreitol and **ferrous sulfate**. The enzyme was inhibited by sulfhydryl reagents and iron-chelating agents. The cryst. enzyme, on polyacrylamide electrophoresis with dithiothreitol, gave a single major band and a region of minor diffuse bands. In the absence of dithiothreitol, the intensity of the minor bands increased. On acrylamide gels contg. Na dodecyl sulfate, a single band with mobility corresponding to a mol. wt. of 39,500 was obtained. A single region of enzyme activity corresponding to a mol. wt. of 242,000 was obtained on sucrose gradients contg. dithiothreitol. A portion of this activity was shifted to a region corresponding to a lower mol. wt. when dithiothreitol was omitted.

L4 ANSWER 98 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1970:438904 CAPLUS
DN 73:38904
TI Sorption (coprecipitation) of copper trace impurities by iron(III) hydroxide in the presence of trace amounts of electrolytes
AU Chuiko, V. T.; Gavrilyuk, A. I.
CS USSR
SO Visn. L'viv. Derzh. Univ., Ser. Khim. (1969), No. 11, 49-54
From: Ref. Zh., Khim. 1969, Abstr. No. 17B1208
CODEN: VLDUAB
DT Journal
LA Ukrainian
AB Sorption of trace amts. of **dialysis** refined Cu by **ferric** hydroxide was studied from Cu (**sulfate**) chloride solns., and from 0.06-1.0M Na chloride, Mg (sulfate) chloride and Zn sulfate solns. Cu sorption was better in the presence of SO42- anions than in the presence of Cl- anions. Cations had an ion exchange effect with respect to Cu which was more pronounced with lower soly. of their hydroxides. Cu sorption occurred by hydrolytic and ion exchange mechanisms which are assocd. with the competitive effect of foreign salt cations.

L4 ANSWER 99 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1969:499898 CAPLUS
DN 71:99898
TI Induction of phagocytosis or iron colloid by Ehrlich ascites tumor cells with polycationic substances
AU Yokomura, Eiti
CS Med. Sch., Okayama Univ., Okayama, Japan
SO Gann (1969), 60(4), 439-47
CODEN: GANNA2
DT Journal
LA English
AB Ehrlich ascites tumor cells incubated with colloidal **ferric** chondroitin **sulfate** alone in vitro failed to phagocytize the

colloid but were stimulated to phagocytize it by the polycations methylated albumin (30 .mu.g./ml.), arginine-rich histone f3 (3 .mu.g./ml.), slightly lysine-rich histone f2 (a) (3 .mu.g./ml.), protamine sulfate (30 .mu.g./ml.), poly (L lysine Me ester)-HBr (3 .mu.g./ml.), and cytochrome c (3000 .mu.g./ml.), but not by the polyanions albumin (3000 .mu.g./ml.), chondroitin sulfate (3000 .mu.g./ml.), or Na heparin (100 .mu.g./ml.). Phagocytosis followed adsorption of the colloid particles onto the tumor cell surface. After pretreatment with papain, **peritoneal** macrophages failed to adsorb colloid particles onto the cell surface and had reduced phagocytic activity. Adsorption of a material to the cell surface is a necessary prerequisite for phagocytosis.

L4 ANSWER 100 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1969:84353 CAPLUS
DN 70:84353
TI Binding of long-chain alkyl **sulfates** to equine **ferric** myoglobin
AU Van den Oord, Andre H. A.; Wesdorp, J. J.
CS Unilever Res. Lab., Duiven, Neth.
SO Eur. J. Biochem. (1969), 8(2), 263-72
CODEN: EJBCAI
DT Journal
LA English
AB When **ferric** myoglobin reacts with alkyl **sulfates**, its absorption spectrum changes into one characteristic of a hemichrome or parahematin. The reaction equil. was studied over a range of protein concns. using dodecyl sulfate and other alkyl sulfates with different chain lengths. The results obtained from spectrophotometric measurements and equil. **dialysis** expts. are not in agreement with those of other authors who, from an anal. of spectral changes only, supported the hypothesis of an all-ornone type of reaction whereby 18 detergent anions were bound to 1 mol. of ferric myoglobin. From the results it was concluded that the 1st stage of the assocn. of dodecyl **sulfate** to **ferric** myoglobin at pH 8.0 involves the binding of 1 mol. of detergent without alteration of the myoglobin absorption characteristics. In the 2nd phase a further 3 or 4 mols. of dodecyl sulfate became assocd. This causes the ferric myoglobin to be converted into its ferric myochrome, which exhibits the characteristic hemichrome absorption spectrum. The binding of addnl. dodecyl sulfate mols. to the myochrome then proceeds in numerous discrete steps, so that a great no. of complexes occur simultaneously in the reaction medium. The exptl. evidence indicates that the ferric myoglobin retains its native configuration in these complexes, provided the no. of bound dodecyl sulfate anions does not exceed 50. The assocn. compds. can be described as low-spin coordination complexes, in which a 2nd imidazole originating from histidine E7 occupies the 6th coordination site of the iron atom.

L4 ANSWER 101 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1968:93182 CAPLUS
DN 68:93182
TI Role of iron in the oxidase activity of ceruloplasmin
AU McDermott, James A.; Huber, C. T.; Osaki, Shigemasa; Frieden, Earl
CS Florida State Univ., Tallahassee, Fla., USA
SO Biochim. Biophys. Acta (1968), 151(3), 541-57
CODEN: BBACAQ
DT Journal
LA English
AB Trace iron was assocd. with ceruloplasmin (ferroxidase) and the NaOAc buffers used in test systems even after attempts to purify these

substances by chromatog. on Chelex-100 and Amberlite CG-50 columns. The concn. of iron eluted with ceruloplasmin from Chelex-100 columns was as high as 10-8M. The amt. of 59Fe eluted with ceruloplasmin increased proportionally with ceruloplasmin concn. Ceruloplasmin, preequilibrated with 59Fe, was **dialyzed** against apotransferrin, reducing the iron concn. to <10-8M and the mol. activity for ascorbate to <1. Several previously reported substrates of ceruloplasmin were reinvestigated with respect to the role of iron in the catalytic process. The reported substrates have now been classified into 3 groups. Fe(II) is oxidized directly by ceruloplasmin. Certain aryldiamines and polyphenols; e.g., p-phenylenediamine and its Me derivs., epinephrine, norepinephrine, dopamine, and serotonin, for which oxidn. is not completely inhibited by iron chelators, are directly oxidized by the enzyme. However, the rates of oxidn. of most of these substrates can be increased by iron via a Fe(II)-cerulo-plasmin coupled reaction. Numerous compds. which reduce Fe(III); e.g., ascorbate, hydroquinone, catechol, hydroxylamine, thioglycolate, cysteine, ferrocyanide, and dopa, for which oxidn. is completely inhibited by iron chelators, appear not to be directly oxidized by the enzyme. Therefore, they must function in an iron-ceruloplasmin coupled reaction and are iron-dependent substrates. The inhibition of the oxidn. of these **iron** coupled substrates by apotransferrin and **citrate** is due to their strong chelation of Fe(III). 32 references.

L4 ANSWER 102 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1968:30442 CAPLUS
DN 68:30442
TI Hydrolytic polymerization of **ferric citrate**. I. Chemistry of the polymer
AU Spiro, Thomas G.; Pape, Leon; Saltman, Paul
CS Princeton Univ., Princeton, N. J., USA
SO J. Am. Chem. Soc. (1967), 89(22), 5555-9
CODEN: JACSAT
DT Journal
LA English
AB The chemistry of **ferric citrate** at equimolar concns. of Fe and citrate was examd. by uv and visible spectrophotometry, glass-electrode measurements, and equilibrium **dialysis**. On titration with base, an anionic chelate, FeCit-, is formed at low pH and then polymerizes in a buffer at pH 8-9, which terminates at 3 base equivs. per g.-atom of Fe. About 85% of the citrate dissoc. from the polymer in the process. The polymer was isolated using the techniques of gel and membrane filtration. Electron microscopy shows the polymer particles to be spherical, with a diam. of 72 .+-. 9 A. Its mol. wt. detd. by its vol. and d. measurements is 2.1 .+-. 0.1 .times. 105. The spheres appear to consist of an **iron** hydroxide core with **citrate** ions bound to the surface. The polymer may be a good model for the iron storage protein, ferritin.

L4 ANSWER 103 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1967:479888 CAPLUS
DN 67:79888
TI Kinetics of molybdenum and iron uptake by growing Azotobacter cells
AU Yakovlev, V. A.; Gvozdev, R. I.
CS Filial Inst. Khim. Fiz., Moscow, USSR
SO Zh. Evol. Biokhim. Fiziol. (1967), 3(3), 185-92
CODEN: ZEBFAJ
DT Journal
LA Russian

AB A. vinelandii was grown in media contg. 1.59 mg. Mo/l. (as Na2MoO4.2H2O) and 14.09 mg. Fe/l. (as monobasic **ferric citrate**). Biomass growth was detd. turbidimetrically. The N-fixing activity was measured by mass spectrometry (CA 64: 13117g). Hydrogenase activity was detd. with neotetrazolium. Mo concns. in culture fluids were detd. from the kinetics of the catalytic oxidn. of rubeanic acid with H2O2 (Pantaler, CA 59: 4544g). Fe concns. were detd. colorimetrically with o-phenanthroline. Mo incorporation into cells growing on mol. N, known to involve mainly combination of Mo with enzymes and some adsorption to the cell wall and to cytoplasmic structures, was directly proportional to N-fixing activity and attained its max. after 23-4 hrs. of cultivation. Partial Mo excretion into the medium was then observed, presumably resulting from dissocn. of Mo-enzyme complexes. The excreted Mo may have been assocd. with compds. having absorption max. at 260 and 565 m.mu. and fluorescence max. at 350, 440 and 510 m.mu.. The extent of Mo incorporation into cells growing in NH4+-contg. medium and of Fe incorporation into cells growing on mol. N was directly proporational to cell growth. Hydrogenase activity of the cells growing on mol. N also parallelled cell growth. Mo and Fe were firmly bound to cells and were essentially not removed by 3-6 washings with water and subsequent 6-hr. **dialysis** against water. It is suggested that Mo, incorporated into growing cells, participates in the enzymic activation of mol. N and is not assocd. with hydrogenase function.

L4 ANSWER 104 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1967:113227 CAPLUS
DN 66:113227
TI Iron reversal of serum inhibited respiration by Bacillus subtilis
AU Bornside, George H.; Getz, Lawrence G.
CS Sch. of Med., Louisiana State Univ., New Orleans, La., USA
SO Proc. Soc. Exp. Biol. Med. (1967), 124(3), 994-9
CODEN: PSEBAA
DT Journal
LA English
AB O consumption by washed cells of B. subtilis respiring in the presence of glucose and by cells growing in soybean broth was inhibited by rabbit and human serum. The inhibition of respiration increased after the serum was **dialyzed** against H2O. Both ferrous and ferric acid salts reversed serum-inhibited respiration. Only **ferric** ammonium **citrate** reversed serum-inhibited growth. 7 S-.gamma.-Globulin, a growth inhibitor, did not inhibit respiration. .beta.2a-Globulin was the only protein common to the 3 inhibitory plasma protein fractions (a fraction consisting of mixed .beta.- and .gamma.-globulins, a fraction of pure .beta.-globulin, and a fraction of an albumin-glycoprotein mixt.) and appeared to be an inhibitor of respiration. The inability of added iron to reverse the antirespiratory activity of these inhibitory protein fractions and of **dialyzed** serum might indicate a role for at least one addnl. serum respiratory inhibitor which is as yet unknown.

L4 ANSWER 105 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1967:17561 CAPLUS
DN 66:17561
TI Incorporation of subcutaneously administered iron-59 by mouse erythrocytes
AU Thomson, Roderick A. E.
CS Sch. of Med. and Dentistry, Univ. of Rochester, Rochester, N. Y., USA
SO Nature (London) (1966), 212(5065), 925
CODEN: NATUAS
DT Journal
LA English

AB One mc. 59Fe(II) citrate was injected subcutaneously into the necks of 7-9-week-old female I.C.R. strain female Swiss-Webster mice. Cardiac blood samples were removed 24 hrs. later and erythrocytes analyzed for radioactivity. Incorporation of 27.21% based upon a 7.5% blood vol. was detd. This rate of 59Fe incorporation into the erythrocytes is comparable to that observed after **intraperitoneal** and intravenous administrations.

L4 ANSWER 106 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1967:5767 CAPLUS
DN 66:5767
TI Ferric-dextran complexes
PA Aktieselskabet Rosco
SO Neth. Appl., 18 pp.
CODEN: NAXXAN
DT Patent
LA Dutch
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 6516637		19660630		
PRAI	DK		19641229		

AB The prepn. of ferric-dextran complexes (I) with a Fe content of up to 42% of the dry wt. and having low toxicity and viscosity is described. From this material isotonic solns. contg. up to 10% Fe can be prepd. Fe(OH)3, formed in situ from a ferric salt and a base, is treated in soln. with partly depolymerized dextran (II). The formed complex is pptd. in 2 fractions, a small one with a high Fe content and a large one with a low Fe content. The latter fraction is purified by either **dialysis**, ion-exchange, or repeated pptn. and then recoupled with II. The product is again fractionated into 2 nearly equal parts, an end product with a high Fe content and one with a low Fe content that can be recycled. Thus, 500 ml. 1.34M Na2CO3 is added, with rapid stirring, to 500 ml. 1.75M aq. FeCl3. To the resulting gel 920 ml. 25% II with an intrinsic viscosity of 0.18 at 25.degree. is added (1.27 mole II/mole Fe). The soln. is heated until the pH has reached 1.1. I is pptd. by addn. of 1700 ml. MeOH. The supernatant is decanted and the complex is dissolved in 600 ml. H2O at 50.degree.. This sequence is repeated until the Fe3+ is removed. The aq.soln. is then heated at 70.degree. for 20 min. to remove MeOH and heated for 20 min. at 110.degree. in an autoclave (1.5 atm.). After cooling, the pH is adjusted to 6.0 with 4N HCl and MeOH is added until its concn. is 36% to ppt. 102 g. I. After decanting and drying the Fe content is 27.2% and the dextran glucoside content is 48.5%. Of this material 26.2 g. is dissolved in 80 ml. H2O and made isotonic with blood by adding NaCl to give a soln. with pH 6.6, an Fe content of 75 mg./ml. and a L.D.50 value of 830 mg. Fe/kg. body wt. as detd. by intravenous injection into mice. To the mother liquor MeOH is added up to a concn. of 60% to ppt. 120.6 g. I contg. 2% Fe and 88% dextran glucoside. Of this material 200 g. is dissolved in 650 ml. H2O and added to a Fe(OH)3 gel made from 500 ml. 1.75M Fe(NO3)3 and 500 ml. 2.68M NaOH. The soln. is heated at 50.degree. for 45 min. and then **dialyzed** for 24 hrs. with ion-exchanged H2O. After heating for 15 min. in an autoclave at 110.degree. the pH is adjusted to 10.8 with 5% NaOH prior to heating at 120.degree. for 30 min. After cooling, the pH is adjusted to 6.0 with 4N HCl and MeOH is added to a concn. of 39% to ppt. 95.2 g. I. After decanting and drying the Fe content is 31.5% and the content of II is 45%. Raising the MeOH concn. to 60% ppt. a second fraction of 110 g. I, contg. 2.5% Fe and 86% dextran glucoside, to be used in a second coupling reaction. Of the first fraction 30.1 g. is dissolved in 80 ml. H2O and

the soln. is made isotonic to give a soln. with pH 6.8 contg. 100 mg. Fe/ml. The viscosity is 13 cp. at 25.degree. and the L.D.50 value is 1150 mg. Fe/kg. I can also be purified by ion-exchange with a mixt. of acid and basic resin until the pH is 2.3. Other suitable Fe salts are ferric trichloroacetate and **ferric** trichloroacetate and **ferric citrate**. The pptn. can also be effected by adding Me2CO, 96% EtOH or iso-PrOH. I prepns. are effective for treatment of anemia.

L4 ANSWER 107 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1965:434026 CAPLUS
DN 63:34026
OREF 63:6110b-c
TI Failure of actinomycin D to prevent induction of liver apoferritin after iron administration
AU Drysdale, J. W.; Munro, H. N.
CS Univ. Glasgow, UK
SO Biochim. Biophys. Acta (1965), 103(1), 185-8
DT Journal
LA English
AB Actinomycin D, 70 .gamma./100 g. body wt., injected intraperitoneally into fasted rats reduced by 80% the incorporation of adenine-14C injected 1 hr. later into RNA in liver cells. Actinomycin D at 70 .gamma./100 g. body wt. injected intraperitoneally into rats 1 hr. prior to **intraperitoneal** injections of **ferric** ammonium **citrate** (300 .gamma. of Fe/100 g. body wt.) and 3 hrs. prior to leucine-14C injections did not suppress the uptake of labeled leucine into ferritin protein after Fe administration. There was no effect on total mixed liver protein as a result of Fe or actinomycin D administration. Increased apoferritin synthesis is independent of new messenger RNA formation.

L4 ANSWER 108 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1965:30891 CAPLUS
DN 62:30891
OREF 62:5511g-h
TI Action of metals on the levan sucrase of Bacillus subtilis
AU Delobbe, Andre; Dedonder, Raymond
CS Inst. Pasteur, Paris
SO Compt. Rend. (1964), 259(18), 3124-7
DT Journal
LA French
AB Levan sucrase of B. subtilis was quickly inactivated at 49.degree., but stabilized against thermal inactivation by certain metals. Fe3+ seemed to act on 2 sites of the mol. by providing thermal stability at one site and by participating in the synthesis of levan at the other site. **Dialysis** for 16 hrs. against metal chelating agents diminished thermal stability. Best protection was provided by Fe3+, **ferric** ammonium **citrate**, Al and Fe phosphates, in phosphate buffer, 0.05M, pH 6, 4 hrs., 49.degree.. Partial protection was given by Zn phosphate and Al2(SO4)3, none by salts of Mn, Cr, Co, Ni, Ca, and Mg.

L4 ANSWER 109 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1964:475414 CAPLUS
DN 61:75414
OREF 61:13065g-h,13066a-b
TI Genetic types of the supergene lithogeochemical provinces
AU Lukashev, K. I.
SO Dokl. Akad Nauk Belorussk. SSR (1964), 8(6), 398-400
DT Journal

LA Unavailable
AB The lithogenic provinces and the mineral deposits related to them were formed by an accumulation of elements produced by geochem. differentiation during the migration of substances and lithogenesis. In the supergene zone, the geochem. provinces were formed by the decompn. and alteration of endogenic ore deposits and rocks subjected to weathering, sedimentation, biogenesis, and epigenesis. Hydrolysis, heating, oxidn.-redn., exchange reaction and replacement, colloidal sorption, complex formation, **dialysis**, biogene reaction related with bacterial activity (**sulfate**-redn., denitrating, **iron** bacteria, etc.) are the main processes controlling weathering and chem. differentiation of substances. Three genetic types of lithogeochem. provinces were sepd.: (1) provinces related to tectonic zones and belts of the earth crust, reflecting large geochem. cycles of substance migration; (2) the provinces related to physico-geographical zones of the earth surface reflecting lithogeochem. facies of supergene sedimentation; and (3) provinces related to the specific local (regional) conditions of lithogenesis and ore formation. The provinces related to large tectonic zones were formed in geosynclinal tectonic conditions characterized by differentiated movements of great magnitude. The sediment accumulation was accompanied by volcanic activity, strong erosion, weak differentiation of substances, and rapid burying of clastic material. The 2nd type of lithogeochem. provinces were formed in the platform conditions of sedimentation, characterized by a relatively small magnitude and differentiation of fluctuating movement. The flat topography and regular distribution of facies, reflecting the effect of climate and biogene factors on the compn. of lithogenesis products, are typical of this province. The provinces formed in these conditions were sepd. into 4 groups: provinces formed (1) by mech. concn., (2) by chem. concn., (3) by diagenetic concn., and (4) by chem. and biogene concn. in basins. The 3rd type of province includes the seacoast, rich in placer deposits of heavy metals and gems, the ancient and recent placer deposits in river valleys, the ore deposits in eluvial crust of weathering, the voids and fractures filled by infiltration, and the secondary deposits of sulfide ores.

L4 ANSWER 110 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1964:456751 CAPLUS
DN 61:56751
OREF 61:9872a-b
TI D-Amino acid oxidase and homogentisate oxygenase activities in tumor-bearing rats
AU Nakata, Yozo; Wada, Fumio; Uchiyama, Setsuo; Sakamoto, Yukiya
CS Univ. Osaka, Japan
SO J. Biochem. (1963), 53(6), 505-7
DT Journal
LA Unavailable
AB D-Amino acid oxidase activity, assayed manometrically, and homogentisate oxygenase activity, assayed manometrically and by a modified Brigg's reaction, decreased in the liver but not in the kidney of a tumor-bearing rat. **Intraperitoneal** administration of riboflavine (3 mg./100 g. body wt./day) or Fe (200 .gamma./100 g. body wt./day, as **ferric gluconate**) did not affect enzyme activity. In vitro addn. of Fe++ (10-3-10-4M) to reduced homogentisate oxygenase had no effect on enzyme activity. In analogous situations, i.e. in pregnancy, under a nonprotein diet, and in fasting, similar results were obtained, indicating internal protein deficiency in tumor-bearing rats and lability of liver protein.

L4 ANSWER 111 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1964:25117 CAPLUS

DN 60:25117
OREF 60:4491b-d
TI Formate-pyruvate exchange reaction in Streptococcus faecalis. II. Reaction conditions for cell extracts
AU Oster, M. O.; Wood, N. P.
CS A. & M. Coll. of Texas, College Station
SO J. Bacteriol. (1964), 87(1), 104-13
DT Journal
LA Unavailable
AB In contrast to intact cells of S. faecalis, no stimulation of the formate-pyruvate exchange reaction was observed in cell exts. when yeast ext. was added to the reaction mixt. A heated ext. of Micrococcus lactilyticus, vitamin K5, **ferrous sulfate**, and **ferrous** ammonium **sulfate** stimulated an active exchange by protecting the system from O. Tetrahydrofolate, 2,3-dimercaptopropanol, and Na2S provided partial protection, whereas ascorbate, glutathione, Na hydrosulfite, ammonium sulfide, and Na2S2O3 gave insufficient protection or were inhibitory. Oxidn.-redn. (O-R) indicators were not inhibitory and were used to est. the O-R potentials of reaction mixts. A potential at least as neg. as - 125 mv. was estd. to be necessary to preserve or initiate formate-pyruvate exchange activity. The reaction operated over a narrow pH range when strict anaerobic conditions were not maintained but, when the system was suitably poised, the pH range was broader. The influence of high phosphate concns. was less under strictly anaerobic conditions, and orthophosphate could be replaced by small amts. of pyrophosphate. Effect of temp., time, and amt. of ext. is presented. Addn. of reduced benzyl viologen and H-satd. Pd in the buffer during 8-hr. **dialysis** prevented inactivation of exts. Recovery of activity could be obtained after (NH4)2SO4 treatment when a combination of Pd chloride, neutral red, and H bubbling were used.

L4 ANSWER 112 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1963:476342 CAPLUS
DN 59:76342
OREF 59:14237b-d
TI Nicotinamide-adenine dinucleotide nucleosidases of Mycobacterium butyricum
AU Toida, I.
CS Japan Antituberc. Assoc., Tokyo
SO Acta Chem. Scand. (1963), 17(Suppl. 1), S161-S164
DT Journal
LA English
AB Mycobacterium butyricum was grown in a medium contg. asparagine 4.0, MgSO4.7H2O 0.5, K2HPO4 0.5, **citric** acid 2.0, **ferric** ammonium **citrate** 0.05 g./l., glycerol 60 ml./l. adjusted to pH 7.0. A washed cell suspension was immersed in a boiling water bath for 6 min. and then cooled. The centrifuged ppt. was homogenized and sonicated. The ppt. was again subjected to sonic oscillation. The supernatants were combined. (NH4)2SO4 (17.6 g./100 ml.) was added and the supernatant was let stand for 4 hrs. Then 19.8 g. (NH4)2SO4 was added to 100 ml. of supernatant. After 4 hrs. the ppt. was collected, dissolved in distd. water, and **dialyzed** against distd. water and then 27.7 g. (NH4)2SO4 was added to 100 ml. soln. After 4 hrs. the ppt. was discarded and 9.9 g. (NH4)2SO4 was added to 100 ml. soln.; after 4 hrs. the ppt. was dissolved, **dialyzed** against distd. water, and absorbed on diethylaminoethyl cellulose buffered with 0.025M phosphate buffer at pH 7.2. Inactive proteins were eluted with the same buffer. The active material was eluted with 0.067M phosphate buffer, pH 7.2 and 39 g. (NH4)2SO4 was added to 100 ml. of eluate. After 4 hrs. the ppt. was collected, dissolved in 0.022M phosphate buffer at pH 7.2, and

dialyzed against the same buffer. A 150-fold purification from the supernatant of the boiled cells was obtained. Enzyme activity was max. at pH 5.5-7.2; 70% activity was retained at pH 8.0. Apparent Jim is 1.88 .times. 10-3M. This nucleosidase is inhibited by nicotinamide, nicotinic acid, and isonicotinamide (5 .times. 10-2M) and isonicotinic acid (1.25 .times. 10-2M) by 11-33%.

L4 ANSWER 113 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1963:10385 CAPLUS
DN 58:10385
OREF 58:1758a-c
TI Comparative study of the calciphylactic challenging potency of various iron compounds
AU Strebel, Ralph; Vasku, Jaromir; Selye, Hans
CS Univ. Montreal, Can.
SO J. Pharm. Pharmacol. (1962), 14, 658-63
DT Journal
LA Unavailable
AB Systematic expts. with 15 groups of female rats (having an av. initial wt. of 99 g.), sensitized for calciphylaxis by pretreatment with dihydrotachysterol (calcamine) (I) were made using 14 different Fe compds. as challengers. I was given at a dose of 1 mg. in 0.5 ml. of corn oil by stomach tube to all animals on the 1st day. On the 2nd day, an Fe compd. was injected intravenously (jugular) in amts. contg. 1 mg. Fe in 1 ml. of H2O. The animals were fed exclusively Purina Lab. Chow and tap water. The surviving animals were killed (CHCl3) on the 6th day. The Fe compds. injected were ferrous carbonate saccharated (II), Fe nucleate (III), Fe **dialyzed** (IV), Fe phosphate sol. (V), **ferric** K tartrate (VI), **ferric** K **citrate** (VII), **ferric** K oxalate, K3Fe(C2O4)3.3H2O (VIII), Fe peptonized (IX), Fe oxide saccharated (X), Fe(OH)3-dextran complex (XI), Fe(OH)3-dextrin complex (XII), FeCl3.6H2O (XIII), FeCl2.4H2O (XIV), and FeSO4.7H2O (XV). Ca deposition was examd. in the skin, tissues, and organs (215 sites). In the I controls, Ca deposition was moderate. Widespread calciphylactic responses were obtained by V and VI which produced Ca deposition in most of the organs. XII induced calcification of the lips in the I-sensitized animal: this change was extremely pronounced. VIII, XIV, and XV induced 53, 80, and 100% mortality, resp. The largest amts. of Fe are usually found in the organs that respond with calcification in the I-sensitized rat. The distribution of the various Fe prepns. in the organs differs quant. and qual.

L4 ANSWER 114 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1961:113499 CAPLUS
DN 55:113499
OREF 55:21367f-h
TI Comparative toxicology of iron compounds
AU Weaver, L. C.; Gardner, R. W.; Robinson, V. B.; Bunde, C. A.
CS Pitman-Moore Co., Indianapolis, IN
SO Am. J. Med. Sci. (1961), 241, 296-302
DT Journal
LA Unavailable
AB The following prepns. (% Fe indicated) were tested: Fe-carbohydrate polymer complex, approx. 50 (I); desiccated **ferrous sulfate**, 29.7 (II); **ferrous gluconate**, 11.6 (III); **ferrous fumarate**, 32.9 (IV); **ferric** choline **citrate**, 12.0 (V); parenteral soln. of Fe-polysaccharide complex, 20 mg./ml. (VI); and ferroglycine sulfate complex, 40 mg./tablet (VII). Mice, rats, and dogs were used for testing of the prepns. by oral,

intravenous (i.v.), **intraperitoneal** (i.p.), and intragastric (i.g.) routes. In terms of the amt. of Fe administered, I and IV were less toxic than II, III, V, or VII by acute i.g. route in rats; I, III, and VI were less toxic by acute i.v. route in dogs than II or V; by acute i.v. test in mice VI was least toxic, followed by I, then at approximately equal toxicities II, III, and V; by acute i.p. test in mice I was least toxic, then in order of increasing toxicity VI, IV, II=VII, and III=V; and by acute i.g. test in mice I was least toxic, followed by V, III=IV, and II-VII. As indicated by emesis after i.g. administration in dogs, I was least irritating to the gastrointestinal tract, followed in order of increasing emetic effect by IV, V, III, VII, and II. In subacute toxicity tests lasting about 1 month I caused less emesis than II; there were no other signs of toxicity of either compd.

L4 ANSWER 115 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1960:110945 CAPLUS
DN 54:110945
OREF 54:21233b-d
TI The role of chelation and binding equilibriums in iron metabolism
AU Charley, Philip; Rosenstein, Morton; Shore, Ernest; Saltman, Paul
CS Univ. of S. California, Los Angeles
SO Arch. Biochem. Biophys. (1960), 88, 222-6
DT Journal
LA Unavailable
AB Fe59, as **ferric** ammonium **citrate** (2.6 .times. 106 counts/min.), was added to 110 ml. of rabbit serum, which was then **dialyzed** to remove the excess citrate. Paper ionophoresis and radioactivity scanning revealed all Fe59 to be assocd. with the .beta.1-globulin fraction. Rabbit liver slices were added to the **dialyzed** serum contg. serial dilns. of citrate adjusted to pH 7.4. After incubation at 37.degree. for 1 hr., the slices were washed 3 times with 0.9% saline. Increased concn. of the citrate chelate enhanced the initial uptake of Fe. Ethylenediaminetetraacetate chelate, not a metabolic substrate, also enhanced uptake of Fe59. The results indicate that Fe+++ moves from serum transferrin to liver tissues in the form of sol. chelates of low-mol. wt. and that the initial rate of Fe uptake is directly controlled by the availability and affinity of various proteins specifically involved in the metabolism of the ion.

L4 ANSWER 116 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1958:42409 CAPLUS
DN 52:42409
OREF 52:7625g-i
TI Therapeutic preparations of iron
IN London, Eric; Twigg, Geo. D.
PA Benger Laboratories Ltd.
DT Patent
LA Unavailable
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2820740		19580121	US	

AB The prepn. consists essentially of a colloidal, substantially nonionic Fe(OH)3-partially depolymerized dextran complex (I) of unknown mol. structure. Tested for intravenous toxicity in mice, I shows an LD50 value in excess of 600 mg./kilo and contains at least 2% elemental Fe. To 25 g. partially depolymerized dextran, dissolved in 50 ml. H2O, was added 15 ml. NaOH in 25 ml. H2O, followed by 40 ml. of 30% wt./vol. aq. FeCl3. The mixt. was heated to boiling for 15 min., cooled to room temp., and

centrifuged to remove undissolved material. The soln. was **dialyzed** against running H2O for 24 hrs. in cellophane tubing. The **dialyzed** soln. was concd. under reduced pressure to yield I, a clear, stable soln. contg. 4.15% elemental Fe. I was filtered and autoclaved at 10 lb./sq. in. for 30 min. and had a pH of 6.8. When **ferric citrate** was substituted for FeCl3, the mixt. was heated for 2 hrs. at 65.degree., filtered, and cooled. The filtrate was stirred with 95% EtOH, and the ppt. was sepd. and dissolved in H2O. From the aq. soln., I was pptd. as above and dissolved in H2O and concd. under reduced pressure at 45.degree. until the soln. contained 5% Fe.

L4 ANSWER 117 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1957:35969 CAPLUS
DN 51:35969
OREF 51:6861h-i,6862a
TI Effect of continued iron administration on the endocrine glands of the guinea pig
AU Telkka, Antti; Kuusisto, A. N.; Antila, Viljo
CS Pharm. Manufrs. Orion Oy, Helsinki
SO Ann. Med. Exptl. et Biol. Fenniae (Helsinki) (1956), 34, 259-62
DT Journal
LA English
AB The guinea pigs were killed by exsanguination, and the pituitary, thyroid, adrenal, and thymus glands and the testes were removed, weighed with torsion balance, fixed in Bouin's fluid, embedded in paraffin, and stained with Mallory's azan method. The results showed that saccharated Fe oxide, given in **intraperitoneal** injections in a daily dose of 80 mg. Fe/kg., ferrous chloride ascorbate, in a daily dose of 8 mg. Fe/kg. and **ferrous gluconate** in a daily dose of 20 mg. Fe/kg. produced in a month a marked involution of the thymus and a slight hypertrophy of the adrenals. **Ferrous gluconate** caused a pronounced involution of the testes and an interrupted spermiogenesis. The weight gain of Fe-treated animals was much slower than that of controls. There were no changes in the histological picture of the pituitary and thyroid glands.

L4 ANSWER 118 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1955:50216 CAPLUS
DN 49:50216
OREF 49:9788d-f
TI Ferritin biosynthesis. II. Acceleration of synthesis by the administration of iron
AU Fineberg, Richard A.; Greenberg, David M.
CS Univ. of California, Berkeley
SO J. Biol. Chem. (1955), 214, 97-106
DT Journal
LA Unavailable
AB The initial rate of incorporation of C14 from labeled amino acids into liver ferritin was compared in normal and Fe-treated guinea pigs by means of the quant. precipitin test for the isolation and analysis of labeled ferritin. The **intraperitoneal** administration of 1.5 mg. of Fe per kg. as **ferric** ammonium **citrate** produced a sustained, several-fold increase in incorporation of C14 from leucine or glycine into liver ferritin. The lack of any comparable effect of Fe on uptake of C14 into mixed liver proteins, besides demonstrating the specificity of the action of Fe on ferritin synthesis, ruled out any interfering effect of Fe on protein-precursor pools, and therefore permitted the conclusion that the increased uptake of C14 indicates accelerated synthesis of ferritin. Ferritin synthesis in some Fe-treated

animals accounted for as much as 3% of the total liver protein synthesis. Eight hrs. after the injection of Fe, there was a demonstrable net increase in the protein moiety of liver ferritin, which roughly agreed in quantity with the amt. estd. from the C14-incorporation data. Conclusion: Administered Fe accelerates the de novo synthesis of the protein moiety of total ferritin. No hypothesis of retarded breakdown alone is adequate to explain the action of Fe.

L4 ANSWER 119 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1954:18574 CAPLUS
DN 48:18574
OREF 48:3413d-e
TI Activation of **fumaric** hydrogenase by **ferrous** ions
AU Harrison, K.
CS Univ. Cambridge, UK
SO Nature (1953), 172, 509
DT Journal
LA Unavailable
AB cf. C.A. 37, 5429.5. Yeast fumaric hydrogenase (I) was purified by **dialysis**. The soln. was subjected to alumina C.gamma., which removed adenine flavine dinucleotide (II) and metallic ions. The time in hrs. required to restore the color to leuco Janus green was: I (blank), more than 25; Fe2+ (0.0074M), more than 25; I and II, 10.5; I, II, and Fe2+, 1.5 hrs. Other ions, like Mn2+, were not effective.

L4 ANSWER 120 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1952:759 CAPLUS
DN 46:759
OREF 46:155d-f
TI The preparation of crystalline conalbumin
AU Warner, Robert C.; Weber, Ione
CS New York Univ., New York, NY
SO J. Biol. Chem. (1951), 191, 173-80
DT Journal
LA Unavailable
AB The conalbumin of hen egg white was prepd. in cryst. form, both as the Fe complex and the Fe-free protein. The filtrate from the prepn. of ovalbumin was used as the starting material. The Fe complex of conalbumin has a lower soly. in concd. (NH4)2SO4 than has the Fe-free conalbumin. The purified conalbumin contains no riboflavin. The Fe is bound very tightly and is difficult to remove. The **ferric-citrate** complex formed when the protein is treated with citrate cannot be removed by **dialysis**, but it can be removed rapidly and completely by ion exchange with Dowex-1. Fe conalbumin has a more neg. mobility than does conalbumin at all pH values. The isoelec. point is 5.8 for Fe conalbumin, and 6.8 for conalbumin.

L4 ANSWER 121 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1950:26997 CAPLUS
DN 44:26997
OREF 44:5256d-i
TI **Citrate** complex of the **ferric** ion
AU Bertin, Colette
SO Bull. soc. chim. France (1949) 489-95
DT Journal
LA Unavailable
AB In titration with NaOH, for the ratio (I) of mol. concn. of sodium citrate to ionic concn. of Fe+++ = 0, the curve of pH vs. equivs. of NaOH added shows an inflection point at 3 equivs. of base. For I = 1/10 to 1, the

starting pH and the shape of the curve are about the same, but the inflection appears with fewer added equivs. of base. With small amts. of base the solns. are yellow. As more base is added Fe(OH)3 forms and then disappears, and an orange to red-brown color develops. The red-brown material does not pass through a **dialysis** membrane, shows the Tyndall effect, and has an absorption curve like those of Fe(OH)3 sols. The yellow solns. show none of these properties. For I = 2-30, the starting pH is much higher than for I = 0-1. A complex, 1 citrate to 1 Fe, is suggested. When I = 30, only the yellow soln. is observed, and an inflection point at 2 equivs. of added base indicates a citrate-Fe complex with 2 acid groups per mol. The pK values of these acid groups are approximated from the pH values of solns. of acids of known pK values, mixed with different concns. of citrate ion and from the inflection point for the curve of the titration for I = 30. The results are pK1 = 2.9 and pK2 = 5.7. The proposed equil. show possible structures: HOC(CO2Fe.aq.++)(CH2CO2-)2 .dblharw. HOC(CO2FeOH.aq.+)(CH2CO2H)(CH2CO2-) .dblharw. HOC(CO2Fe(OH2))(CH2CO2H)2. The pK values for the second and third ionizations of citric acid are 4.3 and 5.7, and they indicate that the last form is not important since pK1 of the complex is 2.9. An alternate structure, (++ Fe.aq.O)C(CO2-)(CH2CO2-)(CH2CO2H), has three acid groups, one of which might not have been detected in this work. Conductimetric titration of ferric ion in excess acid with Na citrate confirms the results of Bobtelsky (C.A. 42, 1521c) in giving a curve with a max. and a min., too complicated to interpret. Titration of Fe(III) soln. with citric acid gives a simpler curve with a marked change of slope at I = 0.94.

L4 ANSWER 122 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1949:38194 CAPLUS
DN 43:38194
OREF 43:6885i,6886a
TI Distribution of electrolytes between solid and liquid phases. I. Uptake of silver **sulfate** by **ferric** hydroxide
AU Chernikova, T. N.; Gapon, E. N.
SO Kolloid. Zhur. (1949), 11, 120-6
DT Journal
LA Unavailable
AB Ag is taken up from Ag2SO4 solns. by **dialyzed** Fe(OH)3 sols prepd. from FeCl3 but not by those prepd. from Fe(NO3)3 or Fe2(SO4)3. Electrodialysis reduces the amt. of Ag adsorbed by Fe(OH)3 from FeCl3 10 to 15 times. Ag is "adsorbed" because it is pptd. as AgCl. SO4++ is taken up from Ag2SO4 solns. by Fe(OH)3 sols from FeCl3 and Fe(NO3)3 because of ion exchange. The alleged mol. adsorption of Ag2SO4 could not be detected, i.e. was less than 0.02 mg.-equiv. per g. Fe2O3.

L4 ANSWER 123 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1948:23408 CAPLUS
DN 42:23408
OREF 42:5065c-e
TI Inhibition of coupled phosphorylation in brain homogenates by **ferrous sulfate**
AU Racker, E.; Krimsky, I.
CS New York Univ. Coll. of Med., New York, NY
SO J. Biol. Chem. (1948), 173, 519-33
DT Journal
LA Unavailable
AB The inhibiting effect of FeSO4 on brain glycolysis is due to an inhibition of the coupled phosphorylation catalyzed by the phosphoglyceraldehyde-oxidizing enzyme. A partial inhibition of this enzyme leads to the

inhibition of adenosinetriphosphate synthesis which is necessary for the formation of fructose 1,6-diphosphate from glucose. The glycolytic activity of a brain homogenate which has been inactivated by the addn. of proteolytic enzymes can be restored through the addn. of the phosphoglyceraldehyde-oxidizing enzyme prepd. from yeast or muscle. If the inactivated brain homogenate is **dialyzed** against 0.1 M KCN for 5 days, the inactivating factor is lost but reactivation can be established by the addn. of FeSO4 and cysteine.

L4 ANSWER 124 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1943:21288 CAPLUS
DN 37:21288
OREF 37:3455i,3456c-f
TI Ferritin. II. Apoferritin of horse spleen
AU Granick, S.; Michaelis, Leonor
SO J. Biol. Chem. (1943), 147, 91-7
DT Journal
LA Unavailable
AB cf. C. A. 37, 2022.7. Two methods are described by means of which the Fe of ferritin (I), after reduction from the ferric to the ferrous state by Na2S2O4, can be removed by **dialysis** as a complex of .alpha., .alpha.'-bipyridine or of o-phenanthroline. An Fe-free, colorless protein, apoferritin (II) is thus obtained in yields as high as 92%. II crystallizes under the same conditions and with the same crystal form as I by treatment with 5% CdSO4. It is possible to obtain crystals from deep brown to colorless with an Fe content of from 23% to 0 without any variation in the crystal form. II is shown to be homogeneous and to have a mol. wt. of about 500, 000 by ultracentrifugation. Unlike I, it is not reversibly pptd. by heat, but like I it is irreversibly denatured and coagulated above 80.degree. and salted out by (NH4)2SO4. Attempts to synthesize I from II by treating with FeCl3, **ferric** ammonium **sulfate** and various kinds of colloidal Fe(OH)3 were unsuccessful, but treatment of II with the "noncrystallizable ferritin, " obtained during the isolation of I from horse spleen, and subsequent pptn. with CdSO4, yields crystals of I. The bearing of these findings on the method of attachment of Fe in I is discussed. S. and M. disagree with Kuhn, et al. (C. A. 35, 3263.8) and maintain that the Fe is not atomically dispersed throughout the protein, but that it is present as micelles of Fe(OH)3 which fill the interstices of the structure of II.

L4 ANSWER 125 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1935:42235 CAPLUS
DN 29:42235
OREF 29:5492f-h
TI The role of inorganic substances and amino acids in the regeneration of hemoglobin in the rat
AU Keil, Havard L.
SO Iowa State, Coll. J. Sci. (1934), 9, 169-70
DT Journal
LA Unavailable
AB This paper reports results of attempts to replace Cu by other substances as hemotinics in the relief of nutritional anemia. Rats kept in individual galvanized iron cages were made anemic by means of a basal diet of milk collected in glass. Inorg. compds. of Ti, Mn, V, As, Ge, Zn, Cr, Sn, Hg, Co, Ag and Au do not act as hemotinics, nor do tyrosine, tryptophan, arginine, glutamic acid or aspartic acid, either in food or injected intraperitoneally. **Intraperitoneal** injections of **iron** as **citrate** or chloride or of dil. HCl gives temporary relief. When Cu in sol. or insol. compds. with or without iron

is fed or injected, regeneration of hemoglobin results.

L4 ANSWER 126 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1935:20031 CAPLUS
DN 29:20031
OREF 29:2578f-h
TI Studies on regeneration of hemoglobin
AU Keil, H. L.; Nelson, Victor E.
SO Proc. Iowa Acad. Sci. (1933), 40, 103-7
DT Journal
LA Unavailable
AB cf. C. A. 26, 186, 4369; 28, 7312.7. Pure Fe, in the form of FeCl3, does not stimulate regeneration of hemoglobin when fed to anemic rats at a level as high as 10 mg. daily. This is the highest amt. of Fe that could be fed and still have the animals consume the food. Tryptophan, tyrosine, aspartic acid, glutamic acid and arginine failed in hematopoiesis when fed at a level of 100 mg. daily to anemic rats. Of all the elements studied Cu was found to be the only one which had a pos. effect on hemoglobin building. **Intraperitoneal** injections of salts of Ni, Zn, Ge, Mn, V, As, Ti, Se, Hg, Rb and Cr failed to increase the amt. of hemoglobin in anemic rats. **Intraperitoneal** injection of FeC3 or **ferric citrate** into rats with nutritional anemia caused an increase in hemoglobin. Pure Fe (OH)3 stimulated hemoglobin regeneration when administered intraperitoneally to anemic rats on milk and Cu. When injected either subcutaneously or intraperitoneally to rats not receiving Cu regeneration did not occur.

L4 ANSWER 127 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1935:10568 CAPLUS
DN 29:10568
OREF 29:1354h-i,1355a
TI Sulfato compounds
AU Brintzinger, H.; Osswald, H.
SO Z. anorg. allgem. Chem. (1934), 221, 21-4
DT Journal
LA Unavailable
AB The authors detd. the coeffs. of **dialysis** of sulfato ions of NH4 Mg **sulfate**, NH4 manganous **sulfate**, NH4 **ferrous sulfate**, NH4 cobaltous **sulfate**, NH4 Ni sulfate, NH4 cupric sulfate, NH4Zn **sulfate**, NH4 Cd **sulfate**, NH4 **ferric sulfate** and NH4, chromic **sulfate** and their corresponding Na compds. by means of a special method of **dialysis** worked out by the authors and under certain exptl. conditions. A table shows the calcd. and experimentally found ionic wts. for the above compds.

L4 ANSWER 128 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1934:49987 CAPLUS
DN 28:49987
OREF 28:6048a-c
TI Diffusion of soluble iron compounds in vitro. The effect of acids, bases and electrolytes
AU Brock, John F.; Taylor, F. H. Laskey
SO Biochem. J. (1934), 28, 447-55
DT Journal
LA Unavailable
AB The rate of **dialysis** of **ferric** NH4 **citrate** across a cellophane membrane is directly proportional to the concn. of the salt. The rate of **dialysis** of this Fe salt into serum and into

a special nonprotein diffusion medium is increased by the presence of 0.1 N HCl. It is decreased slightly by 0.1 N NaOH, moderately by various electrolytes and markedly by secondary and tertiary Na phosphates.

L4 ANSWER 129 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1931:47315 CAPLUS
DN 25:47315
OREF 25:5331c-f
TI Electrometric studies of complex formation. III. Fehling solution and the scale preparations
AU Morton, C.
SO Quart. J. Pharm. Pharmacol (1931), 4, 161-74
DT Journal
LA Unavailable
AB cf. C. A. 25, 3628. Conclusions.-Fehling soln. contains a blue basic colloid complex, 3CuC4H4O6.-5Cu(OH)2, peptized by excess of tartrate ion. The cataphoretic behavior of the hydrosol is due, not to the presence of complex anions, but to the neg. colloid complex. "Bi and NH4 citrate" and "Bi and Na tartrate" are heterogeneous systems consisting of basic colloid complexes, BiC6H5O7.3Bi(OH)3 and Bi(OH)C4H4O6.2Bi(OH)3, resp., dispersed in alkali citrate and tartrate. The colloidal nature of these prepns. and of the official "soln. of Bi and NH4 citrate" can be demonstrated by **dialysis**. When a soln. of citric acid is satd. with Fe(OH)3, the titratable acidity of the acid soln. is approx. halved, and the suggestion that no combination takes place between the hydroxy acid and the Fe cannot be entertained. "Fe and NH4 citrate" is a solid sol of a basic colloid complex FeC6H5O7.2Fe(OH)3 dispersed in NH4 citrate. A considerable excess of uncombined Fe(OH)3 may be peptized in the mixt. Similar basic colloid complexes are present in other scale prepns. of Fe. The red coloration of com. "**ferric citrate**" is due to dispersed basic salts, and the production of green scales in the presence of excess citric acid is due, not to the reduction to the ferrous condition, nor to the formation of complex anions, but to the transformation of colloid complexes into true electrolytes. In solns. of tervalent Fe salts, colloid formation commences at pH 2.3, and in the absence of peptizing and protecting agents flocculation occurs at pH 6.5.

L4 ANSWER 130 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1930:35507 CAPLUS
DN 24:35507
OREF 24:3823c-e
TI The absorption and assimilation of iron
AU Lintzel, Wolfgang
SO Z. Tierzucht. Zuchtungsbiol. Tierernahr. (1930), 17, 244-302
DT Journal
LA Unavailable
AB Iron storage was observed in man by the addn. to a mixed diet of a single dose of 50 mg. of iron in FeCl3, FeCl2, FeSO4, ferrous lactate, spinach or winter cabbage. Iron added as Hb, K4Fe(CN)2, or as **iron** salts with lactic or **citric** acid, was not retained. Only 2.2-3.6% of the ingested K4Fe(CN)6 appeared in the urine. When K4Fe(CN)6 was subcutaneously injected 92% appeared in the urine. Young rats, fed an iron-free diet, stored iron from ingested FeCl2 and FeSO4. Cooked flesh, lettuce and egg yolk had only a small influence on Hb formation in these rats. Iron storage and Hb formation are markedly checked by feeding citric acid, tartaric acid and formic acid, but are less checked by lactic acid and acetic acid. The subcutaneous injection of "ferrum **dialysatum**," **ferrous citrate** and FeSO4 did not result in blood regeneration in rats. A bibliography of 124 references is

appended.

L4 ANSWER 131 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1923:6596 CAPLUS
DN 17:6596
OREF 17:1178f-h
TI The heat of coagulation of **ferric** oxide hydrosol with sodium **sulfate**
AU Browne, F. L.
SO J. Am. Chem. Soc. (1923), 45, 311-21
DT Journal
LA Unavailable
AB cf. C. A. 16, 517. The heat of coagulation of Fe2O3 hydrosols of widely varying purity with 0.2 N Na2SO4 soln. has been investigated with sols prepd. by 3 dissimilar methods: (1) oxidation of neutral FeCl2 soln. with H2O2 and **dialysis**, (2) peptization of pptd. Fe2O3 in FeCl3 soln., (3) addn. of varying amt. of HCl to a sol of high purity made by the first method. The fact that the same values for the heat of coagulation at a given purity and concn. are obtained with sols prepd. by all 3 methods indicates that Fe2O3 sols represent an equil. defined by the temp., pressure, concn., and purity. The change in dispersity of the Fe2O3 during coagulation does not involve a measurable heat effect. The heat effects observed during coagulation of sols of low purity are due to (1) diln. of the FeCl3 and HCl in the sols, (2) mixing of these electrolytes with the Na2SO4, (3) changes in the adsorption equilibria.

L4 ANSWER 132 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1921:4692 CAPLUS
DN 15:4692
OREF 15:839i,840a-i,841a-i,842a-b
TI The organic salts of **iron**. II. **Ferric citrates** and **ferric** ammonium **citrates**
AU Belloni, E.
CS Milan
SO Gazz. chim. ital. (1920), 50(II), 159-212
DT Journal
LA Unavailable
AB In recent years much has been done toward clarifying the structure of org. salts of Fe by the application of Werner's theory of coordination. Such studies have been made of the formates, acetates, benzoates and salicylates of Fe which are reviewed in the first 10 pages of this paper. This is followed by 8 pages of a chronological review of the Fe citrates. **Ferric citrate** was believed to be a normal salt until Martinotti and Cornelio (Boll. chim. farm. 40, 455, 481, 549(1901)) pointed out its strange chem. behavior from this point of view. The accepted simple chemistry of the green and red NH4 Fe citrates was also questioned by M. and C. who, proposed some new formulas. Siboni (Boll. chim. farm. 1905, 625 wished to explain their structure by assuming that Fe is tetravalent. Gerock (C. A. 2, 2425) thought that the Fe entered as a metalorganic acid radical. I. **Ferric citrate**. In all cases the existence of a normal Fe salt was the basis of the various hypotheses concerning the structure of the citrates. The Fe of these salts however is not pptd. by NH4OH nor by K4Fe(CN)6, which suggests the idea that Fe is contained in a complex ion. B. tried first to obtain the normal citrate (C6H5O7Fe) by dissolving Fe(OH)3 in citric acid and obtained a perfectly limpid soln. but all attempts to cryst. out a salt failed. On drying over concd. H2SO4, only the amorphous salt as scales, or as a red-brown mass having a chonchoidal fracture, was obtained. This material contained Fe and citric acid in the proportion used. When some

of this material was concd. to a sirupy consistency and pptd. with excess EtOH red-yellow Fe citrate was sepd., which sepd. from H2O at 50.degree. as fine laminas. The compn. of this material corresponds to [Fe3(C6H5O7)2.(OH)2].1/3C6H5O7.8H2O and is identical in structure with the formates, etc., of Fe referred to above. Of the 8 mols. of H2O 6 are eliminated at 100.degree.. The other 2 are removed only by prolonged drying at 120.degree. and may be considered to be united to the central nucleus. When mol. amts. of Fe(OH)3 and citric acid react 2/9 of the citric acid remains free thus: 9Fe(OH)3 + 9C6H8O7 .fwdarw. Fe9(C6H8O7)7(OH)6 + 2C6H8O7 + 21H2O. Similarly in the reaction 9FeCl3 + 9C6H5O7Na3 + 6H2O .fwdarw. Fe9(C6H5O7)7(OH)6 + 27NaCl + 2C6H8O7 it was found that 2/9 of the citric acid was liberated. Consequently the ordinary Fe citrate is dicitratotriferric citrate, i. e., is the citrate of the base [Fe3(C6H5O7)2(OH)2]OH2 from which it should be possible to obtain other salts of org. acids. Thus the chloroplatinate, [Fe3(C6H5O7)2(OH)2].1/2PtCl6.5H2O was obtained. The formation of this salt confirms the fact that in Fe citrate only 1/7 of the citrate is ionizable and substitutable by other acid radicals. The remaining citrate groups form a relatively stable complex radical with the Fe. These views conform with the chem. behavior of the salt, which reacts for the dicitratetriferric ion and not for Fe" unless the complex is broken down with strong reagents. In the Fe citrate soln. the hydrolytic dissociation may be quite complete so that it is not possible to obtain the trisilver citrate by pptg. with AgNO3 unless the soln. is first accurately neutralized with NH4OH. On the basis of its analogy to Fe formate (Belloni, C. A. 3, 1503) and to the ferric and ferrichromic acetates (Weinland and Herz, C. A. 8, 61) B. has assigned the structure I to this complex ion. This salt differs from the acetates mentioned in being an internal complex salt such as those of benzhydroxamic acid (Werner, Matissen, C. A. 12, 1863. B.'s final conclusion is that the Fe citrate dried at 100.degree. is diaquodicitratodioltriferric citrate (A), C6H5O7[Fe[C6H5O7.Fe(OH)2H2-(OH2)2]3. B. was interested to see if the Cr citrate which has not been described could be prepd. Freshly pptd. Cr(OH)8 with an equimol. amt. of citric acid gives Cr citrate as scales, dark blue by reflected and violet by transmitted light. Its solns. give evidence of dichroism and fail to react for Cr''' ions. With NH4OH the soln. becomes green and nothing is pptd. with alkalies, from which it appears that the complex Cr base is more stable than that of Fe above. This product is the diaquodicitratodioltrichromic citrate, [Cr3(C6H5O7)2(OH)2(OH2)2].1/3C6H5O7.4H2O. From this citrate the chloroplatinate [Cr3(C6H5O7)2(OH)2(OH2)2].1/2PtCl6.3H2O was obtained. The existence of a mixed dicitratodichromiferric base was put in evidence by the compd. [FeCr2(C6H5O7)2(OH)2].-1/3C6H5O7.6H2O. II. Red ammonium **ferric citrate**. This citrate is formed by the addition of NH4OH to the sons. of A. If 7 mols. alkali are added to a soln. of A Fe(OH)3 is pptd. When NH4OH to the extent of 4 mols. is added drop by drop a red neutral soln. is obtained and no pptn. occurs on adding excess. If likewise 4 mols. of NaOH or KOH are added the soln. becomes red and remains neutral. From this it is concluded that the Fe citrate complex ion can absorb 4 mols. of alkali without breaking up. The NH4 deriv. obtained by evapg. on the H2O bath had the compn. [Fe3(C6H4O7)2(NH4)4O2]1/3C6H5O7.4H2O and since dried at 120.degree. it loses 2 H2O it is a diaquodicitratodioxytetramminotriferric citrate, [Fe3(C6H4O7)2.(NH4)4O2(OH2)2].1/3C6H5O7.2H2O. The action of NH4OH on A may 1st be represented thus: In explaining the failure of Fe(OH)3 to ppt. B. departs from previous ideas based on the acid function of OH in glycols, glycerol, etc., and assumes that the acid is FeO2H, which esterifies the citric acid thus: and the complex ion may be represented by II. The salt is diaquodiferrylcitratotetramminoferric citrate (B),

C6H5O7[Fe[C6H4(FeO)O7.(NH4)2]2.(OH2)2]3.6H2O, When but 2 mols. of NH4OH are added diaquocitratoferrylcitratodiammino-ol-**ferric citrate** (C), C6H5O7[Fe[C6H5O7.Fe(OH)][C6H4(FeO)O7,(NH4)2](OH2)2].6 H2O, is formed. The chloroplatinates of the bases in B and C were both obtained and analyzed. The solns. of B can dissolve excess of Fe(OH)3 to the extent of 6.66 mols. Fe(OH)3 in addition to the 3 atoms Fe already present. III. Green ammonium **ferric citrate**. The various hypotheses concerning the constitution of this green form depend upon wrong facts concerning the components. If equal vols. of 3 N tri-Na citrate and FeCl3 are mixed the red-brown color changes to green when 1.5 vols. of the former are present with 1 vol. of the latter. The soln. now contains the green Na **ferric citrate** and NaCl. After **dialysis** this soln. seps. scales (or by adding EtOH) of trisodium ferricitrate (D) Fe2(C6H4O7)3.Na3H3 which does not give reactions of Fe'''. Its solns. are distinctly acid. All but the Na and H constitutes a hexavalent complex ion of which the salt is the tri-Na salt. Two mols. Fe(OH)3 treated with 3 mols. citric acid give free ferricitric acid, which with 3 mols. NaOH gives D or with NH4OH gives triammonium ferricitrate used in pharmacy. The hexavalence of ferricitric acid should it seems give rise to six NH4 salts, depending on the amt. of NH4OH added. Salts with more than 3 NH4 are not obtained, the extra NH4OH evaps. off. In this respect it resembles citric acid, which combines with not more than 2 NH4 groups. B. concludes, therefore, that 1 CO2H is attached to Fe and this leaves but 1 CO2H in each citric add mol. to combine with NH4. The absence of H2O of crystn. leads him to conclude that coordinating valences of the 2 Fe atoms are reciprocally satd. This leads him to the structure this complex ion. The mono-, di- and triammonium ferricitrates are described.

L4 ANSWER 133 OF 225 CAPLUS COPYRIGHT 2002 ACS
AN 1917:1823 CAPLUS
DN 11:1823
OREF 11:350h-i,351a-c
TI Assimilation of iron by rice from certain nutrient solutions
AU Gile, P. L.; Carrero, J. O.
CS Porto Rico Agric. Expt. Sta.
SO J. Agric. Research (1916), 7, 503-28
DT Journal
LA Unavailable
AB cf. C. A. 10, 2237. Rice was grown in acid, neutral, and alk. solns. with different forms and quantities of Fe. In nearly all cases growth was much better in the nutrient solns. contg. 0.008 g. Fe per liter than with 0.002 g. When judged by the growth of plants FeSO4, **ferric citrate**, and **ferric** tartrate afforded sufficient Fe when used in proper quantities in the acid and neutral solns. FeCl3 was an inferior source of Fe, and **dialyzed** Fe was utterly inadequate. Only ferric tartrate furnished sufficient Fe in the alk. soln. Plants grown in the acid solns. contained the highest percentages of Fe. Plants grown in the neutral solns. contained higher percentages of Fe than those grown in the alk. solns. when some forms of Fe were used, but equal percentages when other forms of Fe were used. The percentages of N, P2O5, CaO, MgO, and C-free ash in plants grown in 6 different solns. did not vary appreciably when compared with the Fe content. It was evident that rice was not particularly sensitive to the reaction of the soln., except as the reaction influenced the availability of the Fe. CaO-induced chlorosis is caused by a lack of Fe, and it is strongly indicated that the only action of CaCO3 in inducing chlorosis lies in diminishing the availability of the Fe. The amt. of available Fe in the different solns. could not be detd. analytically, because of the impossibility of

distinguishing between colloidal and sol. Fe. Calculations showed, however, that the concn. of available Fe in many cases must have been less than 1 part in 10,000,000 of soln. The bearing of these results on the proper compn. of plant nutrient solns. is referred to. A list of 15 citations is appended.

L4 ANSWER 134 OF 225 WPIDS (C) 2002 THOMSON DERWENT
AN 2002-065203 [09] WPIDS
DNC C2002-019136
TI Reuse method of waste sulfuric acid as acid washing liquid and inorganic coagulant of **ferrous sulfate**.
DC D15 E36
IN LEE, S G; PARK, S G
PA (POHA-N) POHANG IND SCI RES INST; (POHA-N) POHANG IRON & STEEL CO LTD
CYC 1
PI KR 2001057458 A 20010704 (200209)* 1p
ADT KR 2001057458 A KR 1999-60899 19991223
PRAI KR 1999-60899 19991223
AB KR2001057458 A UPAB: 20020208
NOVELTY - A reuse method of waste sulfuric acid as an acid washing liquid and an inorganic coagulant of **ferrous sulfate** is provided, which can reuse the waste sulfuric acid, eliminate high treatment cost required to treat the acid, and solve landfill problems associated with water treatment plants.

DETAILED DESCRIPTION - The method comprises as follows: (i) dissolve by feeding iron component to waste solution of sulfuric acid to get 220 gram per liter of FeSO4; (ii) filter the residue solid and separate free sulfuric acid contained in waste sulfuric acid solution and iron ion component by diffusion dialyzing with keeping the flow velocity of recovered acid region higher than that of metal waste solution region and by controlling the flow velocity range of both sides to 600-1200 ml per square meter hour; and (iii) measure the concentration of the recovered acid and iron ion-containing metal waste solution which are obtained by diffusion **dialysis**, before keeping the concentration of recovered acid at the proper acid washing concentration range of 150-250 gram per liter and the concentration of iron ion-containing metal waste solution at 200-400 gram per liter of **ferrous sulfate** contained in metal waste solution, followed by using them as acid washing solution and an inorganic coagulant respectively.
Dwg.1/10

L4 ANSWER 135 OF 225 WPIDS (C) 2002 THOMSON DERWENT
AN 1997-131186 [12] WPIDS
DNC C1997-042298
TI A nutrient medium for growing Bacillus subtilis strain N 534 - has improved growth properties and increases the antagonistic action of the grown culture.
DC D16
IN KUZNETSOVA, T N; MIKHAILOVA, N A; SHNAKHMETOV, A SH
PA (UFVA-R) UFA VACCINES SERA RES INST
CYC 1
PI SU 1835845 A1 19960820 (199712)* 5p
ADT SU 1835845 A1 SU 1991-4899653 19910108
PRAI SU 1991-4899653 19910108
AB SU 1835845 A UPAB: 19970320
A nutrient medium for growing Bacillus subtilis strain N 534 is new. The proportions of the ingredients are (wt.%): 20-30 potato-glycerol broth (PGB), 0.1-0.3 ammonium sulphate, 0.2-0.4 sodium citrate, 0.2-0.4 monosubstd. potassium phosphate, 0.3-0.5 ammonium **citrate**,

0.00005-0.00015 **iron** sulphate, 0.0025-0.0075 magnesium sulphate, 0.2-0.4 glutamic acid, 0.5-1.5 lactic acid, 0.005-0.0015 calcium lactate, 0.3-0.5 glucose, 5-9 yeast **dialysate** and remainder distilled water.

To prepare a PGB, 1.0 kg of chopped potato was washed with distilled water, flooded with 2.0 l of pure 4% glycerol soln. until the potato dissolved completely, the liq. obtd. was decanted and filtered through gauze, and distilled water was added to the filtrate to the original vol. 2.5 l PGB was mixed with 7.5 l distilled water with dissolved salt, the mixt. was heated in an autoclave for 30 min. at 110 deg. C and 50 ml of sterile 40% glucose soln. was added. The strain was grown in a fermenter at 37 deg. C over 36 hrs.

ADVANTAGE - The method shortens culturing time by about 8 hrs., increases the number of bacterial cells by about 2.6-fold, and gives a prod. of improved quality.

Dwg.0/0

L4 ANSWER 136 OF 225 WPIDS (C) 2002 THOMSON DERWENT
AN 1991-156394 [22] WPIDS
CR 1990-147730 [19]
DNN N1991-120162 DNC C1991-067562
TI Iron contg. compsn. for NMR imaging of abdominal organs - contains gas generating mixt. to give organ images clarity contains e.g. **iron** (III) **citrate**.
DC B04 B05 B06 P31
IN MATSUMOTO, T; NAKAMURA, J; NAKAMURA, T; OKAMOTO, T; TAKAICHI, A
PA (SAKA) OTSUKA PHARM CO LTD
CYC 5
PI AU 9052540 A 19910411 (199122)* 48p
NO 9001517 A 19910402 (199122)
DK 9000831 A 19910328 (199125)
JP 03120212 A 19910522 (199127)
NO 180283 B 19961216 (199705)
JP 2818892 B2 19981030 (199848) 7p
KR 149014 B1 19981015 (200025)
ADT AU 9052540 A AU 1990-52540 19900403; JP 03120212 A JP 1989-258047 19891002; NO 180283 B NO 1990-1517 19900403; JP 2818892 B2 JP 1989-258047 19891002; KR 149014 B1 KR 1990-4477 19900402
FDT NO 180283 B Previous Publ. NO 9001517; JP 2818892 B2 Previous Publ. JP 03120212
PRAI JP 1989-252895 19890927; JP 1989-258047 19891002
AB AU 9052540 A UPAB: 20000524
NMR imaging method, using a Fe contg. compsn, comprises taki-ng a nuclear magnetic resonance topography, after admin. of the prepn. to the living body.

Also claimed is the Fe contg. compsn. for the NMR imaging, comprising, as essential ingredient, 0.1-10% Fe by wt. as a compound of Fe.

USE/ADVANTAGE- The compsn. is used for NMR imaging of the abdonimal organs, namely, stomach, duodenuiu small or large intestine; or pancreas, liver, **peritoneum** of mesenterium. In these cases, contrast imaging between the alimentary canal and parenchyma internal organs is employed. The compsn. is easy to prepare low in toxicity, and readily soluble in water for oral admin. On soln, in water, it generates CO2 gas, which makes the alimentary canal expand, so that the state of the lumen, and its relation to other organs can be examined. This expansion also facilitates contrast imaging e.g. of the pancreas. To avoid undesirable generation of CO2 gas in storage with loss of foaming ability in the tablets and possible damage to the container, a small amt. of anbydrous

K2CO3 is added to the compsn to remove moisture. @(48pp Dwg.No.0/9)

L4 ANSWER 137 OF 225 WPIDS (C) 2002 THOMSON DERWENT
AN 1990-135673 [18] WPIDS
DNC C1990-059640
TI Compositions for therapy of iron deficiency - contg. iron casein as active substance.
DC B04
PA (SNOW) SNOW BRAND MILK PROD CO LTD
CYC 1
PI JP 02083333 A 19900323 (199018)*
ADT JP 02083333 A JP 1988-234939 19880921
PRAI JP 1988-234939 19880921
AB JP 02083333 A UPAB: 19930928
A composition for therapy of iron deficiency contains iron casein, which consists of 85 wt%-95wt% of protein (calculated as casein), and 0.1-1 wt% of iron and 5012 wt% of water.

A milk or process milk is desalted by electric **dialysis** for removal of calcium bound to casein, and formed into soluble casein powder with the addition of rennet. The powder is dissolved in water (10-25%) to obtain an aq. soln. to which an aq. soln. of 1% of FeSO4 or **iron gluconate** is added to form a curd of iron casein, which is cleaned with ion exchange water, dehydrated and heat dried or freeze-dried to obtain the iron casein powder.

USE/ADVANTAGE - For therapy of anaemia.
0/0

L4 ANSWER 138 OF 225 MEDLINE
AN 2002348731 IN-PROCESS
DN 22086658 PubMed ID: 12091609
TI Adjunctive therapy in anaemia management.
AU Horl Walter H
CS Division of Nephrology and Dialysis, Department of Medicine III, University of Vienna, Vienna, Austria.
SO NEPHROLOGY, DIALYSIS, TRANSPLANTATION, (2002) 17 Suppl 5 56-9.
Journal code: 8706402. ISSN: 0931-0509.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20020702
Last Updated on STN: 20020702
AB Iron supplementation is essential for adequate response to recombinant human erythropoietin (rHuEPO) or darbepoetin alfa. Oral iron therapy is often ineffective as the quantity of iron absorbed after oral intake may be insufficient to keep pace with the demands of rHuEPO-stimulated erythropoiesis in patients with end-stage renal disease (**ESRD**). Currently available i.v. **iron** preparations include dextran, **iron gluconate**, and **iron** sucrose. As rare, but serious, adverse reactions to i.v. iron dextran have been reported, alternative preparations may be preferred. Careful monitoring of iron parameters is required to avoid the effects of over-treatment. Renal anaemia and iron therapy are associated with oxidative stress, leading to a shortening of the lifespan of red blood cells (RBC) and resistance to rHuEPO. rHuEPO therapy may also enhance oxidative stress on RBC. Oxidative stress can be attenuated or prevented by supplementation with vitamin E or melatonin. Vitamin E therapy has also been shown to have a rHuEPO-sparing effect. Disturbances of carnitine metabolism may contribute to the development of renal anaemia in **ESRD** patients. Oral or i.v.

L-carnitine therapy results in an increase in haematocrit and a significant decrease in rHuEPO requirement in HD patients. As yet, there is no general recommendation for L-carnitine supplementation for **ESRD** patients with renal anaemia.

L4 ANSWER 139 OF 225 MEDLINE
AN 2002260649 IN-PROCESS
DN 21994935 PubMed ID: 11997953
TI Weekly administration of high-dose sodium **ferric gluconate** is safe and effective in **peritoneal dialysis** patients.
AU Javier Asuncion M
CS University of Illinois Medical Center, Chicago, IL, USA.
SO NEPHROLOGY NURSING JOURNAL, (2002 Apr) 29 (2) 183-6.
Journal code: 100909377. ISSN: 1526-744X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Nursing Journals
ED Entered STN: 20020510
Last Updated on STN: 20020510
AB This report describes the safety and efficacy of high-dose sodium **ferric gluconate** in 18 **peritoneal dialysis** (PD) patients. Nine patients received low-dose (125 mg) and 9 patients received high-dose (250 mg) sodium **ferric gluconate** once per week for 8 or 4 weeks, respectively, followed by a maintenance dose once every 4 weeks. Patients in both groups had low iron saturation before treatment (hemoglobin [Hgb] < 11 g/dl, transferrin saturation [TSAT] approximately 20%, and serum ferritin < 250 ng/ml). After treatment, TSAT and ferritin significantly increased in both the low-dose (ferritin 465 +/- 292 ng/ml and TSAT 33.5 +/- 6.9%) and high-dose (ferritin 622 +/- 339 ng/ml and TSAT 35.0 +/- 25.7%) groups compared to baseline. Hemoglobin levels also increased in both groups, but this was not statistically significant. No adverse reactions or transferrin oversaturation with high-dose sodium **ferric gluconate** were observed. In conclusion, high-dose sodium **ferric gluconate** was safe, convenient, and effective in treating iron deficiency in PD patients.

L4 ANSWER 140 OF 225 MEDLINE
AN 2001682237 MEDLINE
DN 21585122 PubMed ID: 11728988
TI **Iron** sucrose or **ferric gluconate**?.
AU Duffy C I
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (2001 Dec) 38 (6) 1442.
Journal code: 8110075. ISSN: 1523-6838.
CY United States
DT Letter
LA English
FS Priority Journals
EM 200112
ED Entered STN: 20011203
Last Updated on STN: 20020123
Entered Medline: 20011213

L4 ANSWER 141 OF 225 MEDLINE
AN 2001679404 MEDLINE
DN 21582438 PubMed ID: 11726002
TI Considerations for optimal iron use for anemia due to chronic kidney

disease.
AU Hudson J Q; Comstock T J
CS Department of Clinical Pharmacy, University of Tennessee, Memphis 38163, USA.. jhudson@utmem.edu
SO CLINICAL THERAPEUTICS, (2001 Oct) 23 (10) 1637-71. Ref: 117
Journal code: 7706726. ISSN: 0149-2918.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 200204
ED Entered STN: 20011203
Last Updated on STN: 20020404
Entered Medline: 20020403
AB BACKGROUND: Availability of recombinant human erythropoietin (rHuEPO) has improved the treatment of anemia due to chronic kidney disease (CKD). Iron deficiency is the most common cause of resistance to rHuEPO therapy, contributing to ineffective erythropoiesis and hematocrit/hemoglobin values below the recommended target range (33%-36%/11-12 g/dL). I.v. iron supplementation is necessary to meet increased iron demands from stimulation of erythropoiesis and chronic blood loss; however, questions remain as to the optimal supplementation strategy to maintain appropriate yet safe iron status. Treatment guidelines for anemia management have been developed through the National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF-K/DOQI). OBJECTIVE: This review presents the basis of need for the NKF-K/DOQI guidelines and includes detailed information concerning iron physiology, metabolism, iron preparations, and evaluation of iron status. METHODS: This review was based on a MEDLINE search and complemented by references from the NKF-K/DOQI guidelines (whose review extended beyond MEDLINE). References focusing on normal iron physiology and metabolism, alterations in iron physiology in patients with CKD, laboratory evaluation methods, and strategies for iron supplementation were obtained from MEDLINE and reviewed for content. RESULTS: Controversy over appropriate use of iron supplementation has led to disparity in accepted practice procedures. Oral iron (ferrous salts and polysaccharide iron complex) and i.v. **iron** preparations (**iron** dextran, sodium **ferric gluconate**, and **iron** sucrose) are available. Problems with oral iron supplementation include limited absorption and patient noncompliance. Although most available data on i.v. iron use in the United States are specific to iron dextran preparations, published information based on clinical use of sodium **ferric gluconate** and **iron** sucrose products has been promising. The use of chronic i.v. iron administration to sustain iron stores has been more widely accepted to prevent development of absolute and functional iron deficiency. CONCLUSIONS: Although iron therapy is commonly warranted in patients with CKD, questions remain as to the most favorable supplementation strategy to optimize therapy through improvements in hematocrits, efficient use of rHuEPO, and maintenance of appropriate and safe iron levels. Clinicians will need to devise strategies based on the compilation of information from clinical experience and the available literature. Clinical practice guidelines devised by the NKF-K/DOQI have provided a useful tool for the medical community using both these resources.

L4 ANSWER 142 OF 225 MEDLINE
AN 2001337712 MEDLINE
DN 21084303 PubMed ID: 11216557

TI Is absorption of high-dose oral iron sufficient in **peritoneal dialysis** patients?.
CM Comment in: Perit Dial Int. 2000 Nov-Dec;20(6):598-600
AU Dittrich E; Puttinger H; Schneider B; Horl W H; Haag-Weber M; Vychytil A
CS Department of Medicine III, University Hospital of Vienna, Austria.
SO PERITONEAL DIALYSIS INTERNATIONAL, (2000 Nov-Dec) 20 (6) 667-73.
Journal code: 8904033. ISSN: 0896-8608.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200106
ED Entered STN: 20010618
Last Updated on STN: 20010618
Entered Medline: 20010614
AB OBJECTIVE: Iron supplementation plays a major role in erythropoietin-treated end-stage renal disease patients. For **peritoneal dialysis** (PD) patients, oral iron substitution is more convenient than intravenous therapy. However, disturbed iron absorption and adverse effects may be limiting factors for oral treatment. Nevertheless, we compared the response to a high-dose and low-dose oral iron absorption test between PD patients and healthy control subjects. PATIENTS AND INTERVENTIONS: In 34 PD patients and 15 healthy control subjects, blood samples were taken at baseline as well as 2, 4, and 8 hours after oral intake of 4 tablets **iron sulfate** (105 mg elemental **iron** per tablet). In a subgroup of 6 PD patients and 6 control subjects, the oral iron absorption test was repeated using 1 tablet **iron sulfate**. RESULTS: There was no significant difference in the increase in serum iron during the test between the two groups. As known for healthy subjects, iron absorption was significantly better in PD patients with absolute iron deficiency compared to those with functional iron deficiency. Iron-repleted PD patients showed the lowest iron absorption, indicating that a high dose of oral iron did not overwhelm the ability of the bowel tract to reject unneeded iron. Increasing the oral iron dose from 1 to 4 tablets was followed by a better response in a small subgroup of PD patients compared to control subjects. Side effects such as nausea and vomiting occurred more frequently during high-dose oral iron in control subjects than in PD patients (20% vs 8.8%). CONCLUSION: High-dose oral iron is well absorbed in iron-depleted PD patients. This kind of oral iron therapy should be considered in some subgroups of PD patients with iron deficiency, particularly in those patients with poor vascularization of arm veins or intolerance to intravenous iron preparations.

L4 ANSWER 143 OF 225 MEDLINE
AN 2001337711 MEDLINE
DN 21084302 PubMed ID: 11216556
TI Iron absorption after single pharmacological oral iron loading test in patients on chronic **peritoneal dialysis** and in healthy volunteers.
CM Comment in: Perit Dial Int. 2000 Nov-Dec;20(6):598-600
AU Bastani B; Islam S; Boroujerdi N
CS Division of Nephrology, Saint Louis University School of Medicine, St. Louis, Missouri 63110, USA.. bastanib@slu.edu
SO PERITONEAL DIALYSIS INTERNATIONAL, (2000 Nov-Dec) 20 (6) 662-6.
Journal code: 8904033. ISSN: 0896-8608.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 200106
ED Entered STN: 20010618
Last Updated on STN: 20010618
Entered Medline: 20010614
AB OBJECTIVE: Oral iron is poorly absorbed in chronic **dialysis** patients. We tested the hypothesis that a superpharmacologic dose of **iron sulfate** (260 mg elemental **iron**) administered on an empty stomach results in significant iron absorption in these patients. DESIGN: A prospective open controlled trial. SETTING: Outpatient department of a university hospital. PATIENTS: Nine stable chronic **peritoneal dialysis** (PD) patients and seven normal control subjects. METHOD: All subjects ingested a single dose of 4 tablets of **iron sulfate** (260 mg elemental **iron** total) in the morning while fasting. OUTCOME MEASURES: Serum iron concentrations at baseline, and at 2 and 4 hours after the oral dose were compared between the two groups. RESULTS: The control group showed a significant rise in mean [standard error (SE)] serum iron concentration, from a baseline value of 76.5 +/- 7 microg/dL to 191 +/- 10.5 microg/dL at 2 hours and to 190 +/- 24 microg/dL at 4 hours. This result represents a percentage rise of 164% +/- 32% at 2 hours and 152% +/- 28.5% at 4 hours. In the PD patients, a significant rise in serum iron concentration was also seen, from a baseline value of 64 +/- 8 microg/dL to 130 +/- 3 microg/dL at 2 hours and 111 +/- 18 microg/dL at 4 hours. This result represents a percentage rise of 105% = 29% at 2 hours and 77% +/- 23.5% at 4 hours. However, the absolute change in serum iron concentration in PD patients at 2 and 4 hours was approximately equal to 50% of the change in control subjects at those time points. None of the PD patients experienced gastrointestinal side effects; 4 control subjects experienced mild side effects. CONCLUSION: Despite impaired oral iron absorption in chronic **dialysis** patients, a large pharmacologic dose given orally can result in significant iron absorption and may prove to be a more efficient means of oral iron supplementation therapy in these patients.

L4 ANSWER 144 OF 225 MEDLINE
AN 2001122765 MEDLINE
DN 21012051 PubMed ID: 11130261
TI The comparative safety of intravenous iron dextran, **iron** saccharate, and sodium **ferric gluconate**.
AU Fishbane S; Kowalski E A
CS Department of Medicine, Winthrop-University Hospital, Mineola, New York, USA.
SO SEMINARS IN DIALYSIS, (2000 Nov-Dec) 13 (6) 381-4. Ref: 29
Journal code: 8911629. ISSN: 0894-0959.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 200102
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010222
AB Intravenous iron treatment is an important component of anemia therapy for patients on **dialysis**. Until recently iron dextran was the only parenteral form of iron available in the United States. This drug has been associated with occasional serious adverse reactions, including full-blown anaphylaxis. In 1999 the Food and Drug Administration approved a second

form of **iron** for intravenous administration, sodium **ferric gluconate** in sucrose. It is expected that by the time of this publication, a third agent, iron saccharate will also be approved. In this review the comparative safety of these three agents is critically evaluated.

L4 ANSWER 145 OF 225 MEDLINE
AN 2001061104 MEDLINE
DN 20507562 PubMed ID: 11054110
TI Interferon-gamma and lipopolysaccharide regulate the expression of Nramp2 and increase the uptake of iron from low relative molecular mass complexes by macrophages.
AU Wardrop S L; Richardson D R
CS Department of Medicine, Royal Brisbane Hospital, Brisbane, Queensland, Australia.
SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (2000 Nov) 267 (22) 6586-93. Journal code: 0107600. ISSN: 0014-2956.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200012
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001228
AB The natural resistance associated macrophage protein 2 (Nramp2) is a transporter that is involved in iron (Fe) uptake from transferrin (Tf) and low molecular mass Fe complexes. Here we describe the effect of the inflammatory mediators interferon-gamma (IFN-gamma) and lipopolysaccharide (LPS) on the expression of Nramp2 mRNA and Fe uptake by cells of the macrophage lineage. After incubation of the RAW264.7 macrophage cell line with LPS there was a sevenfold increase in the expression of the 2.3 kb Nramp2 mRNA transcript when compared with the control, but little effect on the Nramp2 3.1 kb transcript. These results indicate differential regulation of the two transcripts. Treatment with LPS resulted in an increase in 59Fe uptake from 59Fe-nitrilotriacetic acid, while transferrin receptor (TfR) mRNA levels and 59Fe uptake from 59Fe-Tf were decreased. Paradoxically, at the same time, an increase in iron regulatory protein (IRP)1 RNA-binding activity was observed. Incubation with IFN-gamma (50 U.mL-1) resulted in a marked decrease in TfR mRNA levels but had no effect on Nramp2 mRNA expression. Exposure of RAW264.7 cells to both IFN-gamma and LPS resulted in a fourfold increase in the Nramp2 2.3-kb transcript and a four to fivefold decrease in the 3.1-kb transcript when compared with the control. Furthermore, there was a decrease in TfR mRNA levels despite an increase in IRP1 RNA-binding activity and a marked increase in inducible nitric oxide synthase mRNA expression. Hence, TfR and Nramp2 mRNA expression did not appear to be regulated in a concerted manner. Similar responses to those found above for RAW264.7 cells were also observed in the J774 macrophage cell line and also for primary cultures of mouse **peritoneal** macrophages. These results are of interest as the TfR and Nramp2 are thought to act together during Fe uptake from Tf. This is the first report to demonstrate regulation of the Nramp2 mRNA transcripts by inflammatory mediators.

L4 ANSWER 146 OF 225 MEDLINE
AN 2000306422 MEDLINE
DN 20306422 PubMed ID: 10852693
TI Benefits of early utilization of intravenous iron.
AU Vogel S

CS South Valley Regional Dialysis Center, Inc. Encino, CA, USA.
SO NEPHROLOGY NURSING JOURNAL, (2000 Feb) 27 (1) 61-5. Ref: 33
Journal code: 100909377. ISSN: 1526-744X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Nursing Journals
EM 200006
ED Entered STN: 20000622
Last Updated on STN: 20000622
Entered Medline: 20000615
AB Better anemia management has dramatically improved the lives of many patients with end stage renal disease (**ESRD**). Nephrology professionals frequently use two tools--erythropoietin and supplemental iron--to manage anemia. The National Kidney Foundation **Dialysis** Outcomes Quality Initiative (NKF-DOQI) suggests that most **ESRD** patients will need intravenous (i.v.) iron to optimize their response to erythropoietin. In this report, the author reviews published studies showing that i.v. iron reduces erythropoietin dose requirements, resulting in cost savings. She presents data from her center illustrating that i.v. administration of the newly approved Ferrlecit (sodium **ferric gluconate**) also improves anemia management and reduces erythropoietin dose requirements. The author reviews studies showing the efficacy of i.v. iron as monotherapy for anemia in **ESRD** patients. These data support the importance of i.v. iron as an agent to be used alone or in conjunction with erythropoietin in the management of anemia in patients with **ESRD**.

L4 ANSWER 147 OF 225 MEDLINE
AN 2000275494 MEDLINE
DN 20275494 PubMed ID: 10814540
TI NADH-ferric reductase activity associated with dihydropteridine reductase.
AU Lee P L; Halloran C; Cross A R; Beutler E
CS Department of Molecular and Experimental Medicine, Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, California 92037, USA.. plee@scripps.edu
NC AI24838 (NIAID)
DK53505-02 (NIDDK)
RR00833 (NCRR)
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2000 May 19) 271 (3) 788-95.
Journal code: 0372516. ISSN: 0006-291X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200006
ED Entered STN: 20000629
Last Updated on STN: 20000629
Entered Medline: 20000620
AB In mammals dietary ferric iron is reduced to ferrous iron for more efficient absorption by the intestine. Analysis of a pig duodenal membrane fraction revealed two NADH-dependent ferric reductase activities, one associated with a b-type cytochrome and the other not. Purification and characterization of the non-cytochrome ferric reductase identified a 31 kDa protein. MALDI-MS analysis and amino acid sequencing identified the ferric reductase as being related to the 26 kDa liver NADH-dependent

quinoid dihydropteridine reductase (DHPR). The NADH-dependent DHPR ferric reductase activity was found to be pteridine-independent since exhaustive **dialysis** did not reduce activity and heat-inactivation destroyed activity. In intestinal Caco-2 cells, DHPR mRNA levels were found to be regulated by iron. Thus, DHPR appears to be a dual function enzyme, a NADH-dependent dihydopteridine reductase and an iron-regulated, NADH-dependent, pteridine-independent ferric reductase.
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L4 ANSWER 148 OF 225 MEDLINE
AN 2000238381 MEDLINE
DN 20238381 PubMed ID: 10776081
TI Intravenous iron products.
AU Johnson C A; Mason N A; Bailie G R
CS University of Wisconsin School of Pharmacy, Madison, USA.
SO ANNA JOURNAL, (1999 Oct) 26 (5) 522-4. Ref: 21
Journal code: 8411466. ISSN: 8750-0779.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Nursing Journals
EM 200006
ED Entered STN: 20000622
Last Updated on STN: 20000622
Entered Medline: 20000615
AB Intravenous iron has been used extensively and successfully as part of the treatment of anemia in **dialysis** patients. Iron dextran can be used safely, however, there is a slight risk of severe, anaphylactoid reactions. **Iron gluconate** and **iron** sucrose are less likely to cause hypersensitivity reactions. These products should be safe and effective alternatives to iron dextran.

L4 ANSWER 149 OF 225 MEDLINE
AN 2000238380 MEDLINE
DN 20238380 PubMed ID: 10776080
TI Iron management: innovative solutions to persistent challenges--focus on Ferrlecit.
AU Vogel S; Schweitzer S; Seiler S
CS Renal Replacement Therapies, Encino, Calif., USA.
SO ANNA JOURNAL, (1999 Oct) 26 (5) 515-21. Ref: 18
Journal code: 8411466. ISSN: 8750-0779.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Nursing Journals
EM 200006
ED Entered STN: 20000622
Last Updated on STN: 20000622
Entered Medline: 20000615
AB The use of sodium **ferric gluconate** in sucrose injection (Ferrlecit) in the treatment of anemia in patients with end stage renal disease (**ESRD**) was the major topic at the symposium "Iron Management: Innovative Solutions to Persistent Challenges," held April 14, 1999 during the annual ANNA 30th National Symposium in Baltimore, Maryland. Chairperson Susan Vogel, MHA, RN, CNN, addressed the

challenges of anemia management and the limitations of oral iron supplements. She described available intravenous (i.v.) iron therapies and reviewed clinical trial data that demonstrated an excellent safety and efficacy profile for the newly approved i.v. **iron** supplement, sodium **ferric gluconate**. Suzanne Schweitzer, RPh, MPH, discussed **iron** metabolism and the U.S. labeling for sodium **ferric gluconate**, with a focus on dosing and administration. In the final presentation, Suzanne Seiler, RN, described her clinic's experience with sodium **ferric gluconate** and provided an experimental dosing and monitoring protocol. Together, these presentations suggest that sodium **ferric gluconate** is an important new tool for meeting the challenges of iron management in **ESRD** patients.

L4 ANSWER 150 OF 225 MEDLINE
AN 2000204839 MEDLINE
DN 20204839 PubMed ID: 10740666
TI The generation of non-dextran intravenous iron: is iron dextran obsolete?.
AU Lewis M J; Swan S K
SO SEMINARS IN DIALYSIS, (2000 Jan-Feb) 13 (1) 9-10. Ref: 13
Journal code: 8911629. ISSN: 0894-0959.
CY United States
DT Editorial
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 200004
ED Entered STN: 20000505
Last Updated on STN: 20000505
Entered Medline: 20000425

L4 ANSWER 151 OF 225 MEDLINE
AN 2000165387 MEDLINE
DN 20165387 PubMed ID: 10699286
TI Nanosphere based oral insulin delivery.
AU Carino G P; Jacob J S; Mathiowitz E
CS Department of Molecular Pharmacology, Physiology and Biotechnology, Brown University, Providence, RI 02912, USA.
SO JOURNAL OF CONTROLLED RELEASE, (2000 Mar 1) 65 (1-2) 261-9.
Journal code: 8607908. ISSN: 0168-3659.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200005
ED Entered STN: 20000525
Last Updated on STN: 20000525
Entered Medline: 20000518
AB Zinc insulin is successfully encapsulated in various polyester and polyanhydride nanosphere formulations using Phase Inversion Nanoencapsulation (PIN). The encapsulated insulin maintains its biological activity and is released from the nanospheres over a span of approximately 6 h. A specific formulation, 1.6% zinc insulin in poly(lactide-co-glycolide) (PLGA) with **fumaric** anhydride oligimer and **iron** oxide additives has been shown to be active orally. This formulation is shown to have 11.4% of the efficacy of intraperitoneally delivered zinc insulin and is able to control plasma glucose levels when faced with a simultaneously administered glucose challenge. A number of

properties of this formulation, including size, release kinetics, bioadhesiveness and ability to traverse the gastrointestinal epithelium, are likely to contribute to its oral efficacy.

L4 ANSWER 152 OF 225 MEDLINE
AN 2000051187 MEDLINE
DN 20051187 PubMed ID: 10583290
TI Role of nitric oxide in intestinal ischaemia-reperfusion injury studied using electron paramagnetic resonance.
AU Chan K L; Zhang X H; Fung P C; Guo W H; Tam P K
CS Department of Surgery, University of Hong Kong Medical Centre, Queen Mary Hospital, Hong Kong, China.
SO BRITISH JOURNAL OF SURGERY, (1999 Nov) 86 (11) 1427-32.
Journal code: 0372553. ISSN: 0007-1323.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199912
ED Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991227
AB BACKGROUND: The role of nitric oxide in intestinal ischaemia-reperfusion (I/R) remains poorly defined, partly because of difficulty in detecting the nitric oxide free radical. In this study nitric oxide production was assessed during intestinal I/R by direct measurement using electron paramagnetic resonance (EPR), and the production of nitric oxide in jejunum and ileum was correlated with their different abilities to resist I/R injury. METHODS: Rats were given an electron spin trapper (diethyldithiocarbamate/**ferrous citrate**) by **intraperitoneal** injection. Thirty-six segments each of jejunum and ileum were subjected to 15-90 min of ischaemia and 25 min of reperfusion. Tissue samples were analysed for EPR signals using a spectrometer. RESULTS: Mean(s.d.) basal nitric oxide level was significantly higher in ileum (3.39(1.42) units) than jejunum (0. 65(0.05) units) (P = 0.0005). Increasing ischaemic times in the ileum resulted in decreasing nitric oxide levels (85, 32 and 13 per cent of basal level at 30, 60 and 90 min respectively); reperfusion resulted in further nitric oxide reduction (mean decrease 26 per cent). Severe (grade 3) histological damage was observed in low nitric oxide states (after 15 min of I/R in jejunum, 60 min of I/R in ileum). CONCLUSION: Nitric oxide can be measured in intestinal tissues directly by EPR. The findings support a protective role for nitric oxide in I/R, and offer an explanation for the greater resistance to I/R of ileum.

L4 ANSWER 153 OF 225 MEDLINE
AN 1999448489 MEDLINE
DN 99448489 PubMed ID: 10519044
TI The stabilization of ferrous iron by a toxic beta-amyloid fragment and by an aluminum salt.
AU Yang E Y; Guo-Ross S X; Bondy S C
CS Department of Community and Environmental Medicine, University of California, Irvine 92697-1820, USA.
SO BRAIN RESEARCH, (1999 Aug 28) 839 (2) 221-6.
Journal code: 0045503. ISSN: 0006-8993.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

EM 199911
ED Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991117
AB Aluminum is a recognized neurotoxin in **dialysis** encephalopathy and may also be implicated in the etiology of neurodegenerative disease, particularly Alzheimer's disease. Alzheimer's disease is suspected to be associated with oxidative stress, possibly due to the pro-oxidant properties of beta-amyloid present in the senile plaques. The underlying mechanism by which this occurs is not well understood although interactions between amyloid and iron have been proposed. The presence of low molecular weight iron compounds can stimulate free radical production in the brain. This study provides a possible explanation whereby both aluminum and beta-amyloid can potentiate free radical formation by stabilizing iron in its more damaging ferrous (Fe2+) form which can promote the Fenton reaction. The velocity, at which Fe2+ is spontaneously oxidized to Fe3+ at 37 degrees C in 20 mM Bis-Tris buffer at pH 5.8, was significantly slowed in the presence of aluminum salts. A parallel effect of prolongation of stability of soluble ferrous ion, was found in the presence of beta-amyloid fragment (25-35). Ascorbic acid, known to potentiate the pro-oxidant properties of iron, was also capable of markedly stabilizing ferrous ions.

L4 ANSWER 154 OF 225 MEDLINE
AN 1999387275 MEDLINE
DN 99387275 PubMed ID: 10465728
TI Transferrin oversaturation.
CM Comment on: Am J Kidney Dis. 1999 Mar;33(3):595-7
Comment in: Am J Kidney Dis. 2000 Feb;35(2):360-1
AU Strobos J; Weeda O; Seligman P; Nissenson A
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1999 Aug) 34 (2) 401-2.
Journal code: 8110075. ISSN: 1523-6838.
CY United States
DT Commentary
Letter
LA English
FS Priority Journals
EM 199908
ED Entered STN: 19990910
Last Updated on STN: 20010521
Entered Medline: 19990823

L4 ANSWER 155 OF 225 MEDLINE
AN 1999358682 MEDLINE
DN 99358682 PubMed ID: 10431735
TI Iron enhancement of experimental infection of mice by Tritrichomonas foetus.
AU Kulda J; Poislova M; Suchan P; Tachezy J
CS Department of Parasitology, Faculty of Science, Charles University, Prague, Czech Republic.. kulda@natur.cuni.cz
SO PARASITOLOGY RESEARCH, (1999 Aug) 85 (8-9) 692-9.
Journal code: 8703571. ISSN: 0932-0113.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199910
ED Entered STN: 19991101
Last Updated on STN: 19991101

Entered Medline: 19991019

AB The ability of a microbial invader to acquire iron from its vertebrate host has been recognized as an important virulence mechanism in some pathogenic bacteria. We examined the involvement of similar mechanisms in an experimental infection of mice by a protozoan pathogen of cattle, Tritrichomonas foetus. In a series of experiments, outbred ICR mice were inoculated intraperitoneally with two strains of T. foetus, the moderately virulent KV-1 (approximately 5% mortality rate) and the highly virulent LUB-1MIP (approximately 80% mortality rate). Treatment of mice with **ferric** ammonium **citrate** (FeAC) (100 mg/kg per day intraperitoneally) increased the mortality rate caused by the KV-1 infection up to the level determined for the highly virulent strain. The treatment effect was dose dependent and required early administration of FeAC after inoculation of parasites and its continued supply for at least 3 subsequent days. Daily sampling of **peritoneal** exudate showed that the infection-enhancing effect of iron overload was associated with a stimulation of parasite multiplication, which in the case of KV-1 infection was strongly suppressed in untreated mice. Consistent with these findings, the strain of lower virulence (KV-1) showed considerably lower efficiency accumulating radiolabeled iron from transferrin and a low-molecular source [Fe(III)nitrilotriacetic acid] in vitro. The results indicate an involvement of iron uptake mechanisms by the parasite as a virulence factor in T. foetus infection.

L4 ANSWER 156 OF 225 MEDLINE
AN 1999288519 MEDLINE
DN 99288519 PubMed ID: 10360239
TI Therapeutic values of different routes of administration of vitamin A with **ferrous sulfate** in treating deferoxamin-induced **iron**-deficiency anemia.
AU Sajedianfard J; Boroujeni H M; Habibzadeh F
CS Department of Pharmacology, School of Veterinary Medicine, Shiraz University, Iran.. sajedian@hafez.shirazu.ac.ir
SO JOURNAL OF NUTRITIONAL SCIENCE AND VITAMINOLOGY, (1999 Jan) 45 (1) 31-7. Journal code: 0402640. ISSN: 0301-4800.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199907
ED Entered STN: 19990806
Last Updated on STN: 19990806
Entered Medline: 19990728

AB About half the pregnant women in developing countries suffer from iron-deficiency anemia. The treatment of choice for these patients includes **iron** compounds such as **ferrous sulfate**. It was recently shown that a concomitant administration of vitamin A with **ferrous sulfate** increases **iron**-induced hematopoietic effect. In the current study, the efficacy of various routes of administration of vitamin A with **ferrous sulfate** in deferoxamin-treated anemic rats were compared. The work reveals no difference among various routes of administration, including several alternates of oral and intramuscular injection of vitamin A and **ferrous sulfate** for 28 d. It was therefore concluded that the therapeutic effect of vitamin A in iron-deficiency anemia is probably not via its influence on iron absorption from the gastrointestinal tract.

L4 ANSWER 157 OF 225 MEDLINE

AN 1999208159 MEDLINE
DN 99208159 PubMed ID: 10193816
TI Hypochromic red cells and reticulocyte haemglobin content as markers of iron-deficient erythropoiesis in patients undergoing chronic haemodialysis.
AU Cullen P; Soffker J; Hopfl M; Bremer C; Schlaghecken R; Mehrens T; Assmann G; Schaefer R M
CS Institut fur Klinische Chemie und Laboratoriumsmedizin, Zentrallaboratorium, Munster, Germany.
SO NEPHROLOGY, DIALYSIS, TRANSPLANTATION, (1999 Mar) 14 (3) 659-65. Journal code: 8706402. ISSN: 0931-0509.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199905
ED Entered STN: 19990607
Last Updated on STN: 19990607
Entered Medline: 19990527
AB BACKGROUND: In patients on chronic haemodialysis, because of a non-specific increase in serum ferritin, iron deficiency may be overlooked leading to failure of erythropoietin treatment. A reticulocyte haemglobin content < 26 pg and a percentage of hypochromic red cells > 2.5 have been proposed as markers of iron-deficient erythropoiesis in such subjects, but it is unclear which parameter is superior. METHODS: We measured haematocrit, reticulocyte haemglobin content, ferritin and the percentage of hypochromic red cells over 10-150 days in 36 chronic haemodialysis patients in a university hospital. Transferrin saturation was also measured in a subset of 25 patients; iron deficiency was defined as a transferrin saturation < 15%. RESULTS: The diagnostic sensitivity and specificity of a reticulocyte haemoglobin content < 26 pg in detecting iron deficiency were 100% and 73% respectively, compared with 91% and 54% for a percentage of hypochromic red cells > 2.5. Paradoxical reticulocyte haemglobin concentrations occurred on follow-up in five patients receiving 4000 U erythropoietin per haemodialysis (HD). In three patients, reticulocyte haemglobin content exceeded 26 pg despite a persistent lack of **iron**. In a fourth, **iron gluconate** (62.5 mg i.v./HD) increased transferrin saturation to 27% and reduced the percentage of hypochromic red cells from 12 to 4, while reticulocyte haemglobin remained > 30 pg. In the final patient, **iron gluconate** increased transferrin saturation from 8 to 30% and reduced the percentage of hypochromic red cells from 40 to below 5, but reticulocyte haemglobin content remained < or = 26 pg throughout. CONCLUSIONS: The reticulocyte haemglobin content is superior to the percentage of hypochromic red cells in detecting iron deficiency in haemodialysis patients.

L4 ANSWER 158 OF 225 MEDLINE
AN 1999168474 MEDLINE
DN 99168474 PubMed ID: 10070926
TI Intravenous iron supplementation in end-stage renal disease patients.
CM Comment on: Am J Kidney Dis. 1999 Mar;33(3):464-70
Comment on: Am J Kidney Dis. 1999 Mar;33(3):471-82
Comment in: Am J Kidney Dis. 1999 Aug;34(2):401-2
AU Matzke G R
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1999 Mar) 33 (3) 595-7. Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT Commentary

[redacted] [redacted]

Editorial
LA English
FS Priority Journals
EM 199903
ED Entered STN: 19990324
Last Updated on STN: 20000303
Entered Medline: 19990311

L4 ANSWER 159 OF 225 MEDLINE
AN 1998427546 MEDLINE
DN 98427546 PubMed ID: 9756115
TI Effective utilization of erythropoietin with intravenous iron therapy.
AU Bhandari S; Brownjohn A; Turney J
CS Renal Unit, Leeds General Infirmary, UK.
SO JOURNAL OF CLINICAL PHARMACY AND THERAPEUTICS, (1998 Feb) 23 (1) 73-8.
Journal code: 8704308. ISSN: 0269-4727.
CY ENGLAND: United Kingdom
DT (CLINICAL TRIAL)
(CONTROLLED CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199812
ED Entered STN: 19990115
Last Updated on STN: 19990115
Entered Medline: 19981207
AB INTRODUCTION: Iron replacement therapy reduces the demand for erythropoietin (EPO) in some **dialysis** patients. It has been postulated that iron supply to the bone marrow is a rate-limiting step in the process of erythropoiesis under erythropoietin stimulation. METHODS: We evaluated the economic benefit of intravenous iron therapy for this purpose in a prospective, non-blinded study of 22 haemodialysis patients, 16 male, six female, mean age 62 years (range 24-80 years). All patients had a serum ferritin (SF) of < or = 60 microg/L, despite oral iron therapy. Patients with high aluminium and/or parathyroid hormone (PTH) levels, underlying bleeding/haematological disorders or active inflammatory diseases were excluded. Patients were established on subcutaneous EPO and given intravenous iron over seven consecutive **dialysis** sessions (total dose 1050 mg) and supplemental monthly doses with regular monitoring for 4 months. RESULTS: The median EPO dose was 4000 units/week (mean 6050 units/week) pre-treatment and 2000 units/week (mean 3700 units) at 6 weeks post intravenous iron therapy (P=0.03). No serious adverse events occurred in the 154 treatment sessions of intravenous iron. Mean haemoglobin (Hb) level remained constant at 6 and 12 weeks (P=0.087). Serum ferritin levels (P< 0.0001) rose significantly, while a reduction in transferrin saturation (TS) became significant at the end of the study (P=0.0047). The use of intravenous iron allowed a substantial monthly cost saving per patient in our unit. CONCLUSION: Intravenous iron therapy is a safe and cost-effective method for maintaining or improving Hb levels with a more effective utilization of EPO in patients with low SF levels despite oral iron therapy.

L4 ANSWER 160 OF 225 MEDLINE
AN 1998210040 MEDLINE
DN 98210040 PubMed ID: 9550669
TI Parvovirus B19 infection and unresponsiveness to erythropoietin therapy in haemodialysis patients.
AU Duranay M; Bali M; Sahin M; Yakinci G; Vurgun N; Dilmen U
CS Department of Nephrology, University of Inonu, Malatya, Turkey.

SO NEPHROLOGY, DIALYSIS, TRANSPLANTATION, (1998 Mar) 13 (3) 779-80.
Journal code: 8706402. ISSN: 0931-0509.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199805
ED Entered STN: 19980609
Last Updated on STN: 19980609
Entered Medline: 19980527

L4 ANSWER 161 OF 225 MEDLINE
AN 1998182509 MEDLINE
DN 98182509 PubMed ID: 9522042
TI Effects of acute iron overload on Atlantic salmon (Salmo salar) and rainbow trout (Oncorhynchus mykiss).
AU Standal H; Rorvik K A; Lien H; Andersen O
CS Akvaforsk, Institute of Aquaculture Research, As, Norway.
SO BIOLOGICAL TRACE ELEMENT RESEARCH, (1997 Winter) 59 (1-3) 13-22.
Journal code: 7911509. ISSN: 0163-4984.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199805
ED Entered STN: 19980520
Last Updated on STN: 19980520
Entered Medline: 19980508
AB Distribution of radioiron to various tissues after **intraperitoneal** injections was examined in Atlantic salmon and rainbow trout. Liver and spleen were found to be the major iron storage tissues. Injections of 1 or 5 mg **iron** as **ferric** ammonium **citrate** led to a fall in hemoglobin levels in both species after 2 d. Hemoglobin levels returned to normal levels in rainbow trout after 8 d, but Atlantic salmon had not recovered, and Hb levels fell below 3 g/100 mL. In both species, the fall in Hb was associated with a raise in iron levels in spleen and liver, suggesting damage to erythrocytes. Atlantic salmon liver ferritin showed a two- to threefold increase, while rainbow trout showed a sixfold increase, and a more rapid response. The toxic effect of iron in fish appears to be different from the effect in other vertebrates.

L4 ANSWER 162 OF 225 MEDLINE
AN 1998058888 MEDLINE
DN 98058888 PubMed ID: 9398140
TI Achieving target hematocrit in **dialysis** patients: new concepts in iron management.
AU Nissenson A R
CS Department of Medicine, UCLA School of Medicine, USA..
anissens@medicine.medsch.ucla.edu
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1997 Dec) 30 (6) 907-11. Ref: 30
Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980116

Last Updated on STN: 19980116
Entered Medline: 19971230

AB The management of anemia in **dialysis** patients involves a comprehensive understanding of the role of erythropoietin deficiency and of the importance of adequate available iron. It is clear that iron and recombinant human erythropoietin (rHuEPO) in concert allow the clinician to achieve a given target hematocrit in **dialysis** patients. By first repleting and then maintaining iron stores, and with an appreciation of the concept of functional iron deficiency, the nephrologist can achieve target hematocrits with the lowest necessary dose of rHuEPO. Iron repletion and maintenance is difficult to achieve with oral iron, and parenteral iron is needed in most cases. New protocols for ongoing parenteral maintenance therapy with **iron** dextran or **iron gluconate**, a form of **iron** likely to be available soon in the United States, should lead to achievement of target hematocrits in a greater number of patients and be cost-effective in improving patient outcomes.

L4 ANSWER 163 OF 225 MEDLINE
AN 97475769 MEDLINE
DN 97475769 PubMed ID: 9335184
TI The role of nitric oxide as an effector of macrophage-mediated cytotoxicity against Trichomonas vaginalis.
AU Park G C; Ryu J S; Min D Y
CS Department of Obstetrics and Gynecology, College of Medicine, Yonsei University, Seoul, Korea.
SO KOREAN JOURNAL OF PARASITOLOGY, (1997 Sep) 35 (3) 189-95.
Journal code: 9435800. ISSN: 0023-4001.
CY KOREA
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980109
Last Updated on STN: 19980109
Entered Medline: 19971212

AB The purpose of this study is to determine whether nitric oxide is involved in the extracellular killing of Trichomonas vaginalis by mouse (BALB/c) **peritoneal** macrophages and RAW264.7 cells activated with LPS or rIFN-gamma and also to observe the effects of various chemicals which affect the production of reactive nitrogen intermediates (RNI) in the cytotoxicity against T. vaginalis. The cytotoxicity was measured by counting the release of [3H]-thymidine from labelled protozoa and NO2- was assayed by Griess reaction. NG-monomethyl-L-arginine (L-NMMA), NG-nitro-L-arginine methyl ester (NAME) and arginase inhibited cytotoxicity to T. vaginalis and nitrite production by activated mouse perioneal macrophages and RAW 264.7 cells. The addition of excess L-arginine competitively restored trichomonacidal activity of macrophages. Exogenous addition of FeSO4 inhibited cytotoxicity to T. vaginalis and nitric products of macrophages. From above results, it is assumed that nitric oxide plays an important role in the host defense mechanism of macrophages against T. vaginalis.

L4 ANSWER 164 OF 225 MEDLINE
AN 97356545 MEDLINE
DN 97356545 PubMed ID: 9212981
TI Anti Candida activity of induced transferrin in mice immunized with inactivated Candida albicans.
AU Watanabe T; Tanaka H; Nakao N; Mikami T; Suzuki M; Matsumoto T

CS Department of Microbiology, Tohoku College of Pharmacy, Sendai, Japan.
SO BIOLOGICAL AND PHARMACEUTICAL BULLETIN, (1997 Jun) 20 (6) 637-40.
Journal code: 9311984. ISSN: 0918-6158.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199708
ED Entered STN: 19970902
Last Updated on STN: 19970902
Entered Medline: 19970818
AB Mice immunized with formalin-killed Candida albicans were resistant to challenge by a lethal amount of viable C. albicans. The growth-inhibitory activity to C. albicans was detected in sera from the immunized mice, and was inhibited by the addition of anti-transferrin antibody or **ferric sulfate**. Both the amount of transferrin and the unsaturated iron-binding capacity (UIBC) in the serum were significantly increased, indicating that apo-transferrin increased in the immunized mice. Moreover, the **intraperitoneal** administration of apo-transferrin enhanced the protection from the Candida infection in vivo.

L4 ANSWER 165 OF 225 MEDLINE
AN 97351459 MEDLINE
DN 97351459 PubMed ID: 9207741
TI Ivermectin-induced killing of microfilariae in vitro by neutrophils mediated by NO.
AU Zahner H; Schmidtchen D; Mutasa J A
CS Institut fur Parasitologie, Justus-Liebig-Universitat Giessen, Federal Republic of Germany.
SO EXPERIMENTAL PARASITOLOGY, (1997 Jun) 86 (2) 110-7.
Journal code: 0370713. ISSN: 0014-4894.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199707
ED Entered STN: 19970724
Last Updated on STN: 19970724
Entered Medline: 19970714
AB Rat neutrophil granulocytes isolated after **intraperitoneal** casein injection of the donors exhibit high cytotoxic efficacy in vitro against microfilariae of Litomosoides carinii in the presence of ivermectin. Optimum effects of 80-90% killing of microfilariae were obtained with 100 ng ivermectin per milliliter and a microfilariae: cell ratio of 1:100. Spleen cells killed approximately 30% of the microfilariae under these conditions. Cytotoxic effects were independent of any adherence of the cell to the larvae. In contrast to the effects of spleen cells, cytotoxicity of neutrophils completely abrogated when cells and targets were separated by a membrane impermeable for the cells, suggesting a very short-living mediator in the latter case. Correspondingly, cytotoxic effects of neutrophils were completely inhibited by the addition of the arginine analogues NG-monomethyl-L-arginine and L-canavanine, indicating the involvement of reactive nitrogen intermediates. The nitric oxide scavenger hemoglobin also protected the microfilariae. Several compounds which are known to interfere with reactive oxygen intermediates were ineffective. An excess of ferrous ions in the medium in the presence of a reducing agent significantly reduced the cytotoxic efficacy of neutrophils.

L4 ANSWER 166 OF 225 MEDLINE
AN 97229147 MEDLINE
DN 97229147 PubMed ID: 9075144
TI Intravenous administration of **iron gluconate** during haemodialysis.
AU Calvar C; Mata D; Alonso C; Ramos B; Lopez de Novales E
CS Nephrology Service, Carlos Haya Regional Hospital, Malaga, Spain.
SO NEPHROLOGY, DIALYSIS, TRANSPLANTATION, (1997 Mar) 12 (3) 574-5.
Journal code: 8706402. ISSN: 0931-0509.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199707
ED Entered STN: 19970721
Last Updated on STN: 19970721
Entered Medline: 19970707

L4 ANSWER 167 OF 225 MEDLINE
AN 97048307 MEDLINE
DN 97048307 PubMed ID: 8893143
TI Oral iron absorption test in patients on **CAPD**: comparison of **ferrous sulfate** and a polysaccharide **ferric** complex.
AU Tinawi M; Martin K J; Bastani B
CS Division of Nephrology, St. Louis University Health Sciences Center, Mo 63110, USA.
SO NEPHRON, (1996) 74 (2) 291-4.
Journal code: 0331777. ISSN: 0028-2766.
CY Switzerland
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199702
ED Entered STN: 19970227
Last Updated on STN: 19970227
Entered Medline: 19970213
AB We prospectively compared the absorption of **ferrous sulfate** to that of a polysaccharide **ferric** complex (Niferex) in 5 healthy controls and 7 stable patients on continuous ambulatory **peritoneal dialysis** (**CAPD**). All study subjects received an equivalent of 150 mg of elemental iron of either preparation, in a random fashion. After a baseline fasting serum iron level was obtained, the serum iron concentration was measured at 2 h in the control group and at 2 and 4 h in the **CAPD** patients. One to 2 months later, all study subjects received the alternative iron compound and were studied in an identical manner. A significant rise in serum iron was only observed in the healthy subjects after the ingestion of **ferrous sulfate** and not Niferex (**ferrous sulfate** 102 +/- (SE) 9 vs. 142 +/- 7 Mg/dl, p = 0.0005; Niferex 96 +/- (SE) 10 vs. 102 +/- 12 mg/dl; baseline vs. 2 h, respectively). The absorption of both compounds was poor in the patients on **CAPD**, with the 2- and 4-hour serum iron levels not significantly higher than the baseline values (**ferrous sulfate** 73 +/- 7 vs. 107 +/- 21 vs. 109 +/- 21 mg/dl, p = NS; Niferex 57 +/- 11 vs. 65 +/- 14 vs. 60 +/- 11 mg/dl, p = NS; baseline vs. 2 vs. 4 h, respectively). Our data

suggest that the absorption of both **ferrous sulfate** and **ferric** polysaccharide complex is poor in patients on **CAPD**.

L4 ANSWER 168 OF 225 MEDLINE
AN 96270785 MEDLINE
DN 96270785 PubMed ID: 8664335
TI Iron-ascorbate-phospholipid mediated modification of low density lipoprotein.
AU Greenspan P; Yu H; Gutman R L; Mao F; Ryu B H; Lou P
CS Department of Pharmacology and Toxicology, School of Pharmacy, University of Georgia, Athens 30602, USA.
NC HL-43794 (NHLBI)
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1996 Jun 11) 1301 (3) 242-8.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199608
ED Entered STN: 19960819
Last Updated on STN: 19960819
Entered Medline: 19960802
AB LDL can be oxidized by a variety of agents to form a modified lipoprotein which is capable of being avidly metabolized by macrophages. While previous in vitro studies have focused exclusively on the oxidation of LDL, other lipids found in the atheroma are also subject to oxidation and its lipoperoxide byproducts may contribute to the process of LDL modification. To examine the relationship between the oxidation of phospholipids and the subsequent modification of LDL, we incubated 250 microM phosphatidylcholine with 10 microM **ferrous sulfate** and 50 microM ascorbic acid in 10 mM Tris (pH 7.0). After 18 h at 37 degrees C, significant amounts of thiobarbituric acid reactive substances (TBARS) were formed. The inclusion of LDL (100 micrograms protein/ml) elevated the TBARS and increased the electrophoretic mobility of the lipoprotein. LDL treated with iron and ascorbate in the absence of phosphatidylcholine did not result in the modification of this lipoprotein. LDL that was incubated with phosphatidylcholine, iron and ascorbate was found to be metabolized by macrophages to a far greater extent than native LDL or LDL treated with phosphatidylcholine alone. Probucol (10 microM) inhibited the LDL modification process. These results demonstrate that while iron and ascorbate cannot oxidize LDL directly, the addition of phosphatidylcholine to these initiators of lipid peroxidation can mediate and lead to the modification of LDL.

L4 ANSWER 169 OF 225 MEDLINE
AN 96265585 MEDLINE
DN 96265585 PubMed ID: 8671820
TI Is zinc protoporphyrin an indicator of iron-deficient erythropoiesis in maintenance haemodialysis patients?.
AU Braun J; Hammerschmidt M; Schreiber M; Heidler R; Horl W H
CS Haemodialysis Unit Nunberg, Germany.
SO NEPHROLOGY, DIALYSIS, TRANSPLANTATION, (1996 Mar) 11 (3) 492-7.
Journal code: 8706402. ISSN: 0931-0509.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199609

ED Entered STN: 19960919
Last Updated on STN: 19980206
Entered Medline: 19960910

AB BACKGROUND. Zinc protoporphyrin (ZPP), a metabolic intermediate generated in the red blood cell by incorporation of zinc instead of iron, has been suggested to be a sensitive and specific parameter of absolute iron deficiency in haemodialysis (HD) patients. METHODS. We studied 62 HD patients, 29-86 years old, with ZPP levels > 50 mumol/mol haeme (normal value of ZPP < 40 mumol/mol haeme) assessing the value of ZPP as a marker of functional iron deficiency at different cut-off points of ZPP. None of the patients had apparent inflammatory disease, infectious disease, or malignancy. ZPP, haemoglobin, iron and ferritin levels were determined before, and after a 24-week period of once-weekly i.v. administration of 40 mg iron, to determine whether ZPP levels return to normal during adequate iron supplementation (960 mg iron/ patient). RESULTS. There was no significant change in ZPP levels after iron supplementation in patients with a ZPP > 50 mumol/mol haeme (96.7 +/- 49.8 versus 88.4 +/- 43.5 mumol/mol haeme before and after iron administration respectively, P = n.s.). However, in patients with a ZPP > 90 mumol/mol haeme, there was a significant reduction in ZPP levels (141.2 +/- 54.5 versus 108.0 +/- 48.8 mumol/mol haeme, P < 0.001). Serum ferritin increased significantly in both groups. There was no correlation between ZPP and serum ferritin at any time during the study. There was also no correlation between serum aluminium levels and ZPP and no significant difference in changes in ZPP in patients receiving desferrioxamine therapy compared to those not receiving desferrioxamine therapy. We did find a significant correlation between moderately elevated total blood lead concentrations and ZPP levels at the end of the study. The ZPP levels were not significantly different in the range from 50-110 mumol/mol haeme before and after i.v. iron supplementation in the responders (10% increase of haemoglobin or 20% decrease of the recombinant human erythropoietin dose) compared with the non-responders. CONCLUSIONS. Our data indicate that ZPP cannot be used to predict the erythropoietic response to iron supplementation. However, ZPP levels may be an indicator of functional iron deficiency due to blockade of the reticuloendothelial iron release in haemodialysis patients.

L4 ANSWER 170 OF 225 MEDLINE
AN 96209053 MEDLINE
DN 96209053 PubMed ID: 8616962
TI Erythropoietin concentration, body iron and cytokines.
CM Comment on: Clin Nephrol. 1995 Apr;43(4):249-55
AU Navarro Gonzalez J F; Teruel J L
SO CLINICAL NEPHROLOGY, (1996 Jan) 45 (1) 68.
Journal code: 0364441. ISSN: 0301-0430.
CY GERMANY: Germany, Federal Republic of
DT Commentary
Letter
LA English
FS Priority Journals
EM 199606
ED Entered STN: 19960620
Last Updated on STN: 19970203
Entered Medline: 19960613

L4 ANSWER 171 OF 225 MEDLINE
AN 96150571 MEDLINE
DN 96150571 PubMed ID: 8593092
TI [Methods for rapid evaluation of the effectiveness of drugs showing promise for urgent prevention and treatment of plague].

Metody uskorennoi otsenki effektivnosti khimiopreparatov, perspektivnykh dlia ekstrennoi profilakitiki i lecheniia chumi.
AU Romanov V E; Vasil'ev N T; Shabalin B A; Kozhemiako A V; Zhivov I V
SO ANTIBIOTIKI I KHIMIOTERAPIIA, (1995 Jun) 40 (6) 31-6.
Journal code: 8803688. ISSN: 0235-2990.
CY RUSSIA: Russian Federation
DT Journal; Article; (JOURNAL ARTICLE)
LA Russian
FS Priority Journals
EM 199604
ED Entered STN: 19960418
Last Updated on STN: 19960418
Entered Medline: 19960403
AB The choice of efficient antibacterial drugs useful in special prophylaxis and treatment of plague includes the stage of the in vivo screening whose main disadvantages are long-term and hazardous tests. The paper presents the data showing that a useful chemotherapeutic for the treatment of plague could be safely screened within 48-72 hours. The methods are based on two-fold retrobulbar or **intraperitoneal** administration of a drug within 24 hours to albino mice infected with highly virulent strains of Y. pestis. The dose should not exceed 1.10(7) live microbes. It was shown that the administration of the plague microbes to albino mice simultaneously with **ferrous sulfate** lowered the time of the animal death and accelerated the efficacy estimation of the drug.

L4 ANSWER 172 OF 225 MEDLINE
AN 96040937 MEDLINE
DN 96040937 PubMed ID: 7571614
TI [Assessment of iron absorption in children with chronic renal insufficiency].
Ocena wchlaniania zelaza u dzieci z prezewlekla niewydolnoscia nerek.
AU Roszkowska-Blaim M; Korniszewska J; Makarewicz W
CS Katedry i Kliniki Pediatrii i Nefrologii Ak. Med. w Warszawie.
SO WIADOMOSCI LEKARSKIE, (1994 Sep) 47 (17-18) 659-65.
Journal code: 9705467. ISSN: 0043-5147.
CY Poland
DT Journal; Article; (JOURNAL ARTICLE)
LA Polish
FS Priority Journals
EM 199511
ED Entered STN: 19951227
Last Updated on STN: 19970203
Entered Medline: 19951109
AB The changes were compared of the iron curve in children with chronic renal failure and with terminal renal failure after oral loading dose of ferrous sulphate. Flat curve of absorption was found in both groups of patients with increased stores of systemic iron and high values of transferrin saturation index (TSI). Steep iron curve and very good absorption were found in all children with decreased serum level of ferritin and decreased TSI. The curves of iron absorption at serum ferritin level 250-500 ng/ml pointed to impaired absorption and depended on the initial TSI value and initial iron level in the serum. No significant differences were found in the shape of iron curve depending on **dialysing** methods. Studying of the iron curve and values of TSI in certain patients makes easier the decision of administration of treatment with oral iron preparations even with increased values of TSI and ferritin in the serum.

L4 ANSWER 173 OF 225 MEDLINE
AN 95279943 MEDLINE

DN 95279943 PubMed ID: 7539042
TI Inhibition of viral replication by nitric oxide and its reversal by **ferrous sulfate** and tricarboxylic acid cycle metabolites.
AU Karupiah G; Harris N
CS Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland 20892, USA.
SO JOURNAL OF EXPERIMENTAL MEDICINE, (1995 Jun 1) 181 (6) 2171-9. Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199506
ED Entered STN: 19950707
Last Updated on STN: 20000303
Entered Medline: 19950623
AB IFN-gamma-induced nitric oxide (NO) in the murine macrophage-derived cell line RAW 264.7 was previously shown to inhibit replication of the poxviruses ectromelia and vaccinia (VV) and HSV-1. In the current study we demonstrate that murine macrophages activated as a consequence of VV infection express inducible nitric oxide synthase. These activated macrophages were resistant to infection with VV and efficiently blocked the replication of VV and HSV-1 in infected bystander cells of epithelial and fibroblast origin. This inhibition was arginine dependent, correlated with nitrite production in cultures, and reversible by the NOS inhibitor N omega-monomethyl-L-arginine. NO-mediated inhibition of VV replication was studied by treatment of virus-infected human 293 cells with the NO donor S-nitroso-N-acetyl-penicillamine. Using a VV-specific DNA probe, antibodies specific for temporally expressed viral proteins, and transmission electron microscopy, we have shown that NO inhibited viral late gene protein synthesis, DNA replication, and virus particle formation, but not expression of the early proteins that were analyzed. Putative enzymatic targets of NO were identified by reversing the NO-mediated inhibition of VV replication in the 293 cells with exogenous **ferrous sulfate** and L-cysteine. Reversal of inhibition may derive from the capacity of these reagents to protect or regenerate nonheme iron or thiol groups, respectively, which are essential for the catalytic activities of enzymes susceptible to inactivation by NO.

L4 ANSWER 174 OF 225 MEDLINE
AN 95257048 MEDLINE
DN 95257048 PubMed ID: 7738723
TI Biochemical basis for the killing of Cryptococcus neoformans by rat **peritoneal** cells.
AU Rossi G R; Sastre D A; Rubinstein H R; Masih D T
CS Departamento de Bioquimica Clinica, Facultad de Ciencias Quimicas, Universidad Nacional de Cordoba, Argentina.
SO JOURNAL OF MEDICAL AND VETERINARY MYCOLOGY, (1994 Dec) 32 (6) 405-14. Journal code: 8605493. ISSN: 0268-1218.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199506
ED Entered STN: 19950615
Last Updated on STN: 19970203
Entered Medline: 19950608
AB The biochemical basis of **peritoneal** cell cytotoxicity for

Cryptococcus neoformans was studied by measuring the killing of the yeast by **peritoneal** resident cells and **peritoneal** exudate cells obtained from normal and proteose-peptone-injected animals, respectively. Both cell populations killed C. neoformans to an equivalent extent after 3 h incubation. Exudate cells showed anti-cryptococcal activity from the first hour of incubation, while no killing was observed with resident cells before 3 h. Both cell populations triggered a respiratory burst in response to opsonized C. neoformans as indicated by the fact that killing of the yeast was inhibited by scavengers of reactive oxygen intermediates (ROI). C. neoformans susceptibility to H2O2 and hydroxyl radicals in cell-free systems is demonstrated by incubating a yeast suspension with different concentrations of H2O2 and Fenton's reagents, respectively. These results suggest that oxygen metabolites play an active role in C. neoformans killing.

L4 ANSWER 175 OF 225 MEDLINE
AN 95177169 MEDLINE
DN 95177169 PubMed ID: 7872321
TI Efficacy of oral iron therapy in patients receiving recombinant human erythropoietin.
AU Wingard R L; Parker R A; Ismail N; Hakim R M
CS Department of Medicine, Vanderbilt University Medical Center, Nashville, TN 37232-2372.
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1995 Mar) 25 (3) 433-9.
Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199503
ED Entered STN: 19950407
Last Updated on STN: 19970203
Entered Medline: 19950330
AB Iron supplementation is required by most **dialysis** patients receiving recombinant human erythropoietin. The efficacy of oral iron is variable in these patients, and many require the use of intravenous iron dextran to maintain adequate iron levels, defined as transferrin saturation greater than 20%, serum ferritin greater than 100 ng/mL, and serum iron greater than 80 micrograms/dL. To determine the efficacy of different oral iron preparations in maintenance of iron status, we prospectively studied 46 recombinant human erythropoietin-treated patients and randomized them to receive different oral iron preparations. These four preparations included Chromagen (**ferrous fumarate** ; Savage Laboratories, Melville, NY), Feosol (**ferrous sulfate**; SmithKline Beecham, Inc, Pittsburgh, PA), Niferex (polysaccharide; Central Pharmaceuticals, Inc, Seymour, IN), or Tabron (**ferrous fumarate**; Parke-Davis, Morris Plains, NJ). All patients were prescribed approximately 200 mg of elemental iron daily of their assigned iron preparation with at least 100 mg ascorbic acid daily for 6 months. At baseline and bimonthly during the study, serum iron, transferrin saturation, ferritin, hematocrit, and recombinant human erythropoietin dose were monitored; in addition, compliance and side effects were recorded by patient interview. All patients were able to maintain target hematocrit during the 6 months of study. However, there were differences in the trends of serum iron, percent transferrin saturation, and ferritin when considered singly or in combination between the four groups of iron medications. The percent of laboratory values

measured over the study period in each group that met the criteria of transferrin saturation more than 20% was greatest in the Tabron group (58%), followed by the Feosol (47%), Chromagen (33%), and Niferex (31%) groups.(ABSTRACT TRUNCATED AT 250 WORDS)

L4 ANSWER 176 OF 225 MEDLINE
AN 95036819 MEDLINE
DN 95036819 PubMed ID: 7949539
TI Factors affecting erythropoietin production and correction of anemia in kidney transplant recipients.
AU Moore L W; Smith S O; Winsett R P; Acchiardo S R; Gaber A O
CS Department of Surgery, University of Tennessee-Memphis 38163.
SO CLINICAL TRANSPLANTATION, (1994 Aug) 8 (4) 358-64.
Journal code: 8710240. ISSN: 0902-0063.
CY Denmark
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199412
ED Entered STN: 19950110
Last Updated on STN: 19970203
Entered Medline: 19941202
AB Anemia does not correct in many kidney transplant recipients, probably due to iron deficiency or inadequate erythropoietin (Epo) production. We evaluated effects of iron (Fe) availability on correction of anemia in renal transplant recipients and sought to characterize patterns of early Epo production by transplanted kidneys as related to peritransplant factors. In a prospective randomized trial, 51 consecutive renal transplant patients were followed for 6 months. Epo was measured on days 0, 3, 14, 48 and 168 posttransplantation. Fe status was monitored on days 14, 48 and 168. Pts were randomized at day 14 based on Fe status. Iron-deficient (FeD) patients (n = 24) were randomized to receive daily Fe supplementation (FeDs, n = 12) or no supplementation (FeDns, n = 12). Those with normal Fe status (FeN, n = 27) were followed as controls. No differences were found between groups at day 0 for Hct, Cr, Epo, age, **dialysis** history, or type of donor. Day 3 Creatinine and Hct were similar among groups, while Epo was significantly higher in FeD groups vs FeN ($p < 0.004$), and continued higher at 6 months. Though each pt improved Hct, most FeDns and FeN were anemic and Fe deficient at 6 months while all FeDs patients had corrected their anemia ($p <$ or $= 0.009$) and Fe status. Four FeDs patients developed polycythemia. Epo production correlated inversely to cold ischemia time in cadaver renal allografts ($p < 0.008$).(ABSTRACT TRUNCATED AT 250 WORDS)

L4 ANSWER 177 OF 225 MEDLINE
AN 94361174 MEDLINE
DN 94361174 PubMed ID: 8080013
TI Influence of body iron stores on the serum erythropoietin concentration in hemodialyzed patients.
AU Teruel J L; Marcen R; Navarro J F; Villafruela J J; Fernandez Lucas M; Rivera M; Ortuno J
CS Department of Nephrology, Hospital Ramon y Cajal, Madrid, Spain.
SO AMERICAN JOURNAL OF NEPHROLOGY, (1994) 14 (2) 95-8.
Journal code: 8109361. ISSN: 0250-8095.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 199410
ED Entered STN: 19941013
Last Updated on STN: 19941013
Entered Medline: 19941004
AB The influence of body iron stores on the concentration of serum erythropoietin was studied in 48 hemodialyzed patients not receiving human recombinant erythropoietin, androgens or iron supplements. The serum erythropoietin concentration was 11.6 +/- 10.4 mIU/ml. There was no correlation between the serum erythropoietin and the hematocrit or hemoglobin concentration; however, there was a correlation between the serum erythropoietin and the log of serum ferritin ($r = -0.5699$, $p < 0.01$). Serum erythropoietin levels were higher in the 18 ferropenic patients (serum ferritin < 50 ng/ml) than in the 30 patients with normal serum ferritin concentration (18 +/- 13.8 vs. 7.8 +/- 4.7 mIU/ml, $p < 0.01$). The administration of intravenous iron to the ferropenic patients resulted in a reduction in serum erythropoietin independent of the response of the anemia (18 +/- 13.8 basal and 7.9 +/- 6.5 mIU/ml at 4 weeks, $p < 0.01$). Our data would suggest that the concentration of erythropoietin in hemodialyzed patients is influenced by the serum ferritin level.

L4 ANSWER 178 OF 225 MEDLINE
AN 94212370 MEDLINE
DN 94212370 PubMed ID: 8160195
TI Resistance of rat kidney mitochondrial membranes to oxidation induced by acute iron overload.
AU Galleano M; Farre S M; Turrens J F; Puntarulo S
CS Facultad de Farmacia y Bioquimica, University of Buenos Aires, Argentina.
SO TOXICOLOGY, (1994 Mar 11) 88 (1-3) 141-9.
Journal code: 0361055. ISSN: 0300-483X.
CY Ireland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199405
ED Entered STN: 19940526
Last Updated on STN: 19970203
Entered Medline: 19940518
AB The effect of iron-overload on rat kidney was studied after a single injection of iron-dextran. Total iron content in kidney and isolated kidney mitochondria was markedly elevated over control values. To assess mitochondrial damage by **iron** overload, **succinate** -cytochrome c reductase and NADH-cytochrome c reductase activities as well as the rate of succinate-dependent hydrogen peroxide generation were measured. None of these activities were significantly affected by acute iron overload. The net content and the rate of TBARS (thiobarbituric acid reactive species) formation in kidney homogenates from iron-treated rats was significantly higher than that of control animals. Total superoxide dismutase activity in the homogenates from iron overloaded kidney was decreased by 26%, as compared to controls. Catalase, glutathione peroxidase, and Mn-superoxide dismutase activities were not affected by the treatment. The content of alpha-tocopherol was consistently decreased in whole kidney homogenates (-31%), mitochondria from kidney medulla (-31%) and cortex (-34%), from iron-overloaded rats. Our data suggest that iron dextran treatment does not affect kidney integrity, even though increases in lipid peroxidation occur. Vitamin E appears to be effective in controlling iron-dextran dependent radical generation in kidney.

L4 ANSWER 179 OF 225 MEDLINE
AN 94040201 MEDLINE
DN 94040201 PubMed ID: 8224391
TI Hydroxypyridinones and desferrioxamine inhibit macrophage-mediated LDL oxidation by iron but not by copper.
AU Lamb D J; Hider R C; Leake D S
CS Dept. of Biochemistry & Physiology, University of Reading, Whiteknights, Reading.
SO BIOCHEMICAL SOCIETY TRANSACTIONS, (1993 Aug) 21 (Pt 3) (3) 234S.
Journal code: 7506897. ISSN: 0300-5127.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199312
ED Entered STN: 19940117
Last Updated on STN: 19980206
Entered Medline: 19931209

L4 ANSWER 180 OF 225 MEDLINE
AN 94039775 MEDLINE
DN 94039775 PubMed ID: 8224192
TI Acidic pH increases the oxidation of LDL by macrophages.
AU Morgan J; Leake D S
CS Department of Biochemistry and Physiology, University of Reading, Whiteknights, Berks, UK.
SO FEBS LETTERS, (1993 Nov 1) 333 (3) 275-9.
Journal code: 0155157. ISSN: 0014-5793.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199312
ED Entered STN: 19940117
Last Updated on STN: 19970203
Entered Medline: 19931203
AB We have investigated the effect of pH on LDL oxidation by macrophages (in the presence of iron ions), using a modification of Hanks' balanced salt solution. Increasing the acidity of the medium greatly increased the oxidation of the LDL by the macrophages as measured by thiobarbituric acid-reactive substances or increased uptake and degradation by a second set of macrophages. The rate of oxidation of LDL by iron ions alone, measured in terms of conjugated dienes, was also increased greatly even at mildly acidic pH. It is quite possible that atherosclerotic lesions have an acidic extracellular pH, particularly in the vicinity of macrophages, and the observation that LDL oxidation by macrophages is increased at acidic pH may therefore help to explain why atherosclerotic lesions are apparently one of the very few sites in the body where LDL oxidation occurs.

L4 ANSWER 181 OF 225 MEDLINE
AN 93112765 MEDLINE
DN 93112765 PubMed ID: 1361844
TI A prospective open-label study evaluating the efficacy and adverse reactions of the use of Niferex-150 in **ESRD** patients receiving EPOGEN.
AU Johnson C A; Rosowski E; Zimmerman S W
CS Department of Medicine, University of Wisconsin, Madison.
SO ADVANCES IN PERITONEAL DIALYSIS, (1992) 8 444-7.

[redacted] [redacted]

Journal code: 9104803. ISSN: 1197-8554.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199302
ED Entered STN: 19930219
Last Updated on STN: 19970203
Entered Medline: 19930202
AB Iron supplementation is usually required in patients receiving epoetin alfa. **Ferrous sulfate** is commonly prescribed, however many patients experience adverse gastrointestinal effects. Adverse effects may limit the amount of iron that can be prescribed, and may lead to noncompliance. Polysaccharide-iron complex (PIC) is an iron supplement containing greater amounts of elemental iron, and may produce fewer adverse effects. This study compared the efficacy and adverse effects of PIC to a historical period of treatment with ferrous iron salts to 38 **dialysis** patients receiving epoetin alfa. All patients were switched to PIC, and were followed for six months. The following laboratory information was recorded: hematocrit, serum iron concentration, percent transferrin saturation, total iron-binding capacity, serum ferritin concentration. Patients were given an adverse experience questionnaire at four and six months of PIC treatment. No differences in laboratory values were noted between treatments. The amount of prescribed elemental iron increased, while iron dextran use decreased during PIC therapy. Epoetin alfa doses were unchanged. Patients reported fewer gastrointestinal adverse effects at four months, however differences at six months were less striking. PIC is as effective as **ferrous sulfate** in sustaining erythropoiesis in patients receiving epoetin alfa. It may produce fewer adverse effects.

L4 ANSWER 182 OF 225 MEDLINE
AN 93112679 MEDLINE
DN 93112679 PubMed ID: 1361760
TI Failure of **CAPD** patients to respond to an oral iron absorption test.
AU Domoto D T; Martin K J
CS Department of Internal Medicine, St. Louis University School of Medicine, Missouri.
SO ADVANCES IN PERITONEAL DIALYSIS, (1992) 8 102-4.
Journal code: 9104803. ISSN: 1197-8554.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199302
ED Entered STN: 19930219
Last Updated on STN: 19970203
Entered Medline: 19930202
AB **CAPD** patients require supplemental iron to maintain a response to erythropoietin. Because of limited availability of parenteral iron dextran, oral iron must be used. However, oral iron may not be effective in most **dialysis** patients. To determine if oral iron is well absorbed, a modified oral iron absorption or tolerance test was performed in **CAPD** patients using two oral iron preparations. Serum irons were measured at baseline in a fasting state and repeated two hours after the ingestion of 325 mgs **ferrous sulfate** in five **CAPD** patients. In addition, eight patients had serum irons determined before and two hours after taking liquid oral **ferrous**

fumarate in capsule form. Healthy controls were compared with each group. All five patients who received **ferrous sulfate** had borderline to low normal serum iron and iron stores. Average increase in serum irons was only 19 mcg/dl in patients compared to 52 mcg/dl in controls. Patients receiving **ferrous fumarate** rose only 14 mcg/dl compared to 60 mcg/dl in controls. We conclude that oral iron is poorly absorbed in most **CAPD** patients and that the oral iron absorption test may be helpful in identifying patients who are effective iron absorbers. Unfortunately, until parenteral iron dextran is readily available, oral iron therapy is the only alternative for iron supplement. The oral iron absorption test may predict who will respond to oral iron in the long-term.

L4 ANSWER 183 OF 225 MEDLINE
AN 92328598 MEDLINE
DN 92328598 PubMed ID: 1627011
TI Oral **iron** therapy with **ferrous fumarate** and polysaccharide **iron** complex.
AU Glassman E
SO ANNA JOURNAL, (1992 Jun) 19 (3) 277-8, 323.
Journal code: 8411466. ISSN: 8750-0779.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Nursing Journals
EM 199208
ED Entered STN: 19920821
Last Updated on STN: 19920821
Entered Medline: 19920813
AB Oral iron replacement therapy with Chromagen, containing **ferrous fumarate**, and Niferex, containing polysaccharide **iron** complex, can successfully maintain hematologic and iron indices in **dialysis** clients and demonstrated fewer adverse effects in selected clients. Their multiple ingredient dose forms, which further support erythropoiesis, and their possible decrease in distressing side effects should enhance client compliance, making these two drugs excellent alternatives to traditional iron therapies.

L4 ANSWER 184 OF 225 MEDLINE
AN 92267052 MEDLINE
DN 92267052 PubMed ID: 1814738
TI In vivo behaviour of low molecular weight iron complexes.
AU Anghileri L J; Cordova Martinez A; Maincent P; Robert J
CS Biophysics Laboratory, Medicine Faculty, University of Nancy, France.
SO EUROPEAN JOURNAL OF DRUG METABOLISM AND PHARMACOKINETICS, (1991 Jul-Sep) 16 (3) 203-6.
Journal code: 7608491. ISSN: 0398-7639.
CY France
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199206
ED Entered STN: 19920710
Last Updated on STN: 19970203
Entered Medline: 19920623
AB The in vivo distribution in mice of **ferric citrate**, **ferric** beta-glycerophosphate and **ferric** lactate complexes has been studied. There is a relationship between the 59Fe uptake by various tissues and the physicochemical characteristics of the

complexes. Ferric lactate seems a useful preparation for iron deficiency therapy.

L4 ANSWER 185 OF 225 MEDLINE
AN 92104661 MEDLINE
DN 92104661 PubMed ID: 1309510
TI Siderophore production and membrane alterations by Bordetella pertussis in response to iron starvation.
AU Agiato L A; Dyer D W
CS Department of Microbiology, State University of New York, Buffalo 14214.
SO INFECTION AND IMMUNITY, (1992 Jan) 60 (1) 117-23.
Journal code: 0246127. ISSN: 0019-9567.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199202
ED Entered STN: 19920302
Last Updated on STN: 19980206
Entered Medline: 19920212
AB Bordetella pertussis was grown in iron (Fe)-free defined medium to limit the growth of the organism. Doubling times of the Fe-starved organism increased by approximately 1 h, and a 40% reduction in the final extent of growth in Fe-depleted medium was observed. Under these conditions, a hydroxamate siderophore named bordetellin was secreted by B. pertussis. Lactoferrin and transferrin supported growth of B. pertussis even when the protein was sequestered inside **dialysis** tubing. This suggested that binding of lactoferrin and transferrin to B. pertussis was not essential and that bordetellin production plays a major role in Fe uptake. Solid-phase dot blot assays indicated weak binding of lactoferrin to the cell surface, consistent with previous reports of a lactoferrin receptor. Three new proteins of 97, 77, and 63 kDa were synthesized in response to Fe starvation. Fe-inducible proteins of 103, 72, 24, 21, and 18 kDa were also observed. The synthesis of lipopolysaccharide was also altered by Fe availability.

L4 ANSWER 186 OF 225 MEDLINE
AN 92002272 MEDLINE
DN 92002272 PubMed ID: 1680462
TI Polycythemia in diabetic patients on **CAPD**.
AU Bender F H; Piraino B
CS Department of Medicine, University of Pittsburgh, PA.
SO ADVANCES IN PERITONEAL DIALYSIS, (1991) 7 77-80.
Journal code: 9104803. ISSN: 1197-8554.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199111
ED Entered STN: 19920124
Last Updated on STN: 19950206
Entered Medline: 19911121
AB Polycythemia in **CAPD** patients has been rarely described. Over an eight year period, 4 out of 123 **CAPD** patients (3%) were identified as having Hct values exceeding 50% for 1 month or longer. All of the 4 patients were insulin dependent diabetics (4/47 diabetic patients, 8.5%). Charts were reviewed on 3 of these 4 patients. Polycythemia developed after a mean of 21 +/- 7 months on **peritoneal dialysis**. Prior to the development of

polycythemia, ferritin levels were low and **ferrous sulfate** therapy was begun at a time the Hct values were 36 to 40%. Erythropoietin levels were obtained in 2 patients, and were 22 U/L (Hct 51%) and less than 5 U/L (Hct 55%). Renal ultrasound failed to show renal masses or cysts. One patient had a plasma volume of 2.1 L (normal 2.4-3.2 L); another patient was clinically volume depleted. Complications during the period of polycythemia included gangrenous feet requiring amputation in 2 patients, CVA in 2 patients, and splenic infarct in 1 patient. One patient died of cerebral thrombosis. We conclude that polycythemia is uncommon in **CAPD** patients and occurs most often in diabetic patients. Volume depletion and iron therapy may play a role in its etiology. In this high risk group of patients polycythemia may contribute to vascular complications and should be avoided.

L4 ANSWER 187 OF 225 MEDLINE
AN 91301511 MEDLINE
DN 91301511 PubMed ID: 1906419
TI Isolation of Mn-SOD and low active Fe-SOD from Methylomonas J; consisting of identical proteins.
AU Yamakura F; Matsumoto T; Terauchi K
CS Department of Chemistry, Juntendo University, Chiba, Japan.
SO FREE RADICAL RESEARCH COMMUNICATIONS, (1991) 12-13 Pt 1 329-34.
Journal code: 8709453. ISSN: 8755-0199.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199108
ED Entered STN: 19910908
Last Updated on STN: 19970203
Entered Medline: 19910822
AB Cultures of Methylomonas J, an aerobic methylotrophic bacterium, were grown both in Mn-rich and Fe-rich media. Crude extracts of the cultures from the Mn-rich and Fe-rich medium showed a specific activity of 12.2 and 0.6 units/mg by a cytochrome c-xanthine oxidase method and 19.4 and 1.3 units/mg by an ESR method, respectively. We isolated Mn-SOD and Fe-SOD from the bacteria grown in the Mn-rich and Fe-rich mediums, respectively. Specific activity and metal contents of the Mn-enzyme were 2,250 units/mg/g-atom Mn and Mn = 0.98 and Fe = 0.12 (g-atoms/mol dimer), while those of the Fe-enzyme were 61 units/mg/g-atom Fe and Mn = 0.02 and Fe = 1.08. No difference of physicochemical properties of the Fe- and Mn-enzymes were detected. Furthermore, enzyme activity was restored by **dialysis** of an apoprotein obtained from the Fe-enzyme with either manganese **sulfate** or **ferrous** ammonium **sulfate**
.

L4 ANSWER 188 OF 225 MEDLINE
AN 91100036 MEDLINE
DN 91100036 PubMed ID: 1987078
TI Characterization of cell envelope proteins of Staphylococcus epidermidis cultured in human **peritoneal dialysate**.
AU Smith D G; Wilcox M H; Williams P; Finch R G; Denyer S P
CS Department of Pharmaceutical Sciences, University of Nottingham, United Kingdom.
SO INFECTION AND IMMUNITY, (1991 Feb) 59 (2) 617-24.
Journal code: 0246127. ISSN: 0019-9567.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 199102
ED Entered STN: 19910329
Last Updated on STN: 19970203
Entered Medline: 19910220
AB The cell envelope protein profiles of Staphylococcus epidermidis cultured in used human **peritoneal dialysate** (HPD) differed markedly from those of cells cultured in nutrient broth. Compared with broth-grown cells, many cell wall proteins were repressed in HPD, although three proteins of 42, 48, and 54 kDa predominated and an iron-repressible 130-kDa protein was induced. Growth in HPD also resulted in expression of two cell membrane proteins of 32 and 36 kDa which were **iron** repressible. Sodium dodecyl **sulfate**-polyacrylamide gel electrophoresis and immunoblot analysis using monospecific polyclonal antisera raised against the 32- and 36-kDa proteins revealed considerable antigenic and molecular mass homology among 12 S. epidermidis isolates from patients with continuous ambulatory **peritoneal dialysis**-related peritonitis. The 32-kDa antiserum also cross-reacted with a 32-kDa S. aureus cell membrane protein. Immunoblots of S. epidermidis cell walls and membranes were also probed with normal human serum and serum and HPD from continuous ambulatory **peritoneal dialysis** patients. While the cell wall proteins of S. epidermidis appeared to be relatively poorly immunogenic, the 32- and 36-kDa membrane proteins reacted strongly with antibodies present in each of the body fluids evaluated. These results suggest that the highly conserved 32- and 36-kDa iron-repressible proteins are expressed during growth in vivo and may be involved in iron transport, since all 12 S. epidermidis strains examined also produced iron chelators.

L4 ANSWER 189 OF 225 MEDLINE
AN 89217586 MEDLINE
DN 89217586 PubMed ID: 2709674
TI Iron status in patients receiving erythropoietin for **dialysis** -associated anemia.
AU Van Wyck D B; Stivelman J C; Ruiz J; Kirlin L F; Katz M A; Ogden D A
CS University of Arizona, Department of Internal Medicine, Tucson.
SO KIDNEY INTERNATIONAL, (1989 Feb) 35 (2) 712-6.
Journal code: 0323470. ISSN: 0085-2538.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198906
ED Entered STN: 19900306
Last Updated on STN: 19970203
Entered Medline: 19890608
AB Adequate body iron stores are crucial to assuring rapid and complete response to recombinant human erythropoietin (rHuEPO). In the present study, markers of iron storage were examined in 27 patients with normochromic, normocytic anemia undergoing acute rHuEPO (150 to 300 U/kg t.i.w.) treatment for anemia. We calculated projected iron needed for new hemoglobin synthesis from the difference between initial and target hemoglobin concentrations, initial iron reserves available from initial serum ferritin levels, and net projected surplus or deficit from the difference between needs and reserves. Of 22 patients predicted to develop iron deficiency (mean projected deficit 268 +/- 70 mg), 20 developed evidence of exhausted iron stores (transferrin %sat less than 16 or ferritin less than 30 micrograms/liter) before reaching target hemoglobin; two predicted to become deficient (projected deficit less than 100 mg) did

not; and all five predicted to avoid iron deficiency (mean projected surplus 177 +/- 20 mg) remained iron replete. During acute rHuEPO therapy net body iron balance remained neutral in patients receiving no iron supplements and increased 5 mg/kg in patients prescribed oral **ferrous sulfate**. However, in patients given **iron** dextran i.v. less than 60% of elemental iron administered became measurable as iron stores or usable for hemoglobin synthesis.

L4 ANSWER 190 OF 225 MEDLINE
AN 88267509 MEDLINE
DN 88267509 PubMed ID: 3389536
TI Tracheobronchial epithelium of the sheep: III. Carbohydrate histochemical and cytochemical characterization of secretory epithelial cells.
AU Mariassy A T; St George J A; Nishio S J; Plopper C G
CS Department of Pathology, School of Veterinary Medicine, University of California, Davis 95616.
NC ES00628 (NIEHS)
SO ANATOMICAL RECORD, (1988 May) 221 (1) 540-9.
Journal code: 0370540. ISSN: 0003-276X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198807
ED Entered STN: 19900308
Last Updated on STN: 19970203
Entered Medline: 19880729
AB We examined histochemically (light microscopy-LM) and cytochemically (electron microscopy-EM) the secretory epithelial cells in the tracheobronchial mucosa of sheep. Six morphologically distinct, granule-containing cells have been described, on the basis of their morphology and airway distribution: four mucous (M1-M4), serous (SC), and Clara (CC). Stereological and morphometric data indicated that M3, M4, SC, and CC were distinctly different from each other and from M1 and M2 cells. Mucous cells M1 and M2 differed in granule morphology. Samples of tracheas, sixth-generation bronchi, distal bronchi, and terminal bronchioles of 18 adult sheep were examined. At the LM level, methacrylate sections were reacted with an alcian blue (pH 2.5), periodic acid Schiff (PAS) sequence to differentiate neutral from acidic glycoconjugates (GC), and a high-iron diamine (HID), alcian blue sequence to differentiate sulfated from nonsulfated (sialylated) GC. At the EM level the periodic acid-thiocarbohydrazide localized hexose-rich, neutral GC. **Dialyzed** iron (DI) and high-**iron** diamine localized carboxylated and **sulfated** GC, respectively. Granules of all but Clara cells were PAS-positive. All mucous cells contained acidic groups, but only M1 and M4 cells had LM-detectable sulfated GC. At the ultrastructural level, minimal but discernible HID and LID reaction product was observed on granule profiles of M2, M3, and SC, indicating acidic and sulfated GC not detected at the LM level. Histochemically, the sheep tracheobronchial epithelium was more similar to that of humans than some other examined mammalian species.

L4 ANSWER 191 OF 225 MEDLINE
AN 88191946 MEDLINE
DN 88191946 PubMed ID: 3358459
TI Short-lasting accumulation in osteoid bone seams of radioactive **iron** injected as **citrate** into mice.
AU Huser H; Gerber L; Eichenberger P; Waelti E; Cottier H
CS Institute of Pathology, University of Bern, Switzerland.

SO AMERICAN JOURNAL OF PATHOLOGY, (1988 May) 131 (2) 339-43.
Journal code: 0370502. ISSN: 0002-9440.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198805
ED Entered STN: 19900308
Last Updated on STN: 19970203
Entered Medline: 19880526
AB The possible role in vivo of osseous structures in binding radioactive iron injected as a low-molecular-weight complex was studied in mice, using combined autoradiography and histomorphometry on sections of undecalcified, plastic-embedded femur epiphyses/metaphyses. A single **intraperitoneal** injection of 10 microCi 59Fe (1.2 micrograms Fe) per animal as citrate within 3 hours led to a preferential accumulation of this metal in the osteoid mineralized tissue interphase (osteoid seams) of bone. Within the next 2 days the labeling intensity in this localization diminished markedly to approximate levels of the bone marrow and calcified bone. The bulk of the injected radioiron was utilized according to known erythrokinetics. Findings suggest a direct entry of "free," ie, not transferrin-bound, iron into osteoid seams and its consecutive rapid removal from this site.

L4 ANSWER 192 OF 225 MEDLINE
AN 87309770 MEDLINE
DN 87309770 PubMed ID: 3114372
TI Lactoferrin effects of phagocytic cell function. II. The presence of iron is required for the lactoferrin molecule to stimulate intracellular killing by macrophages but not to enhance the uptake of particles and microorganisms.
AU Lima M F; Kierszenbaum F
NC AI 14848 (NIAID)
SO JOURNAL OF IMMUNOLOGY, (1987 Sep 1) 139 (5) 1647-51.
Journal code: 2985117R. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198710
ED Entered STN: 19900305
Last Updated on STN: 19970203
Entered Medline: 19871005
AB Human lactoferrin (LF)--a neutrophil glycoprotein, the body fluid levels of which increase in inflammatory conditions--stimulates the phagocytic and cytotoxic properties of macrophages. We found in this work that, whereas the presence of iron in the LF molecule was not required to increase the capacity of mouse **peritoneal** macrophages (MPM) to take up Trypanosoma cruzi amastigotes (AMA), Listeria monocytogenes, or latex particles, it was necessary for LF to enhance intracellular killing of the two microorganisms. Thus, iron-free human lactoferrin (ApoLF), which did not increase MPM cytotoxicity, after restoration of ferric ions prior to its use in MPM treatments or when **ferric citrate** was added to the culture medium immediately after ApoLF treatment of the MPM, does increase MPM cytotoxicity. In that iron ions cannot be internalized as such, the latter observation suggested that ApoLF had taken up iron while membrane bound and then enhanced killing. Immunofluorescence studies revealed that comparable proportions of MPM-bound ApoLF or LF at either 20 or 100% iron saturation without

[redacted] [redacted]

appreciable differences in fluorescence intensity. Therefore, reduced binding of ApoLF compared with LF was not a likely explanation for the lack of effect of ApoLF on MPM killing. LF did not enhance AMA killing by MPM in the presence of the iron chelator deferoxamine. Diethylaminetriamine-pentaacetic acid, an iron chelator which is not incorporated into cells, had a similar effect. The iron-binding protein transferrin did not alter the capacity of MPM to either take up or kill the AMA, indicating that the noted LF effects were not shared by all iron-binding proteins. However, prior treatment of MPM with transferrin enabled the cells to display a greater parasite killing capacity after ApoLF treatment, suggesting a role for iron in this activity. Whether iron is required for LF to impart the signal that elicits enhanced killing, to satisfy a biochemical requirement for more effective killing, or both, remains to be clarified. We also found that killing of internalized AMA by LF-treated MPM--previously reported to be mediated in part by H2O2, O2-., and 1O2--was inhibitable by scavengers of OH., and therefore, appears to involve this oxygen metabolite as well.

L4 ANSWER 193 OF 225 MEDLINE
AN 87150085 MEDLINE
DN 87150085 PubMed ID: 3824419
TI Protection by parenteral iron administration against the inhalation toxicity of beryllium sulfate.
AU Sendelbach L E; Witschi H P
SO TOXICOLOGY LETTERS, (1987 Feb) 35 (2-3) 321-5.
Journal code: 7709027. ISSN: 0378-4274.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198704
ED Entered STN: 19900303
Last Updated on STN: 19970203
Entered Medline: 19870408
AB Animals exposed to an aerosol of BeSO4 showed a significant reduction in mortality with iron treatment. Rats were exposed for 2 h in a nose-only inhalation chamber for 14 days to an aerosol of 2.59 micrograms/Be/l. The cumulative mortality of animals concurrently treated with iron salt was significantly reduced (P less than 0.05) compared to animals which had not received iron treatment.

L4 ANSWER 194 OF 225 MEDLINE
AN 86250886 MEDLINE
DN 86250886 PubMed ID: 3722201
TI A Streptococcus mutans superoxide dismutase that is active with either manganese or iron as a cofactor.
AU Martin M E; Byers B R; Olson M O; Salin M L; Arceneaux J E; Tolbert C
NC DE04903 (NIDCR)
DE07119 (NIDCR)
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1986 Jul 15) 261 (20) 9361-7.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198608
ED Entered STN: 19900321
Last Updated on STN: 20000303
Entered Medline: 19860813

AB The superoxide dismutase produced by Streptococcus mutans OMZ176 during aerobic growth in a chemically defined medium (modified FMC) that was treated with Chelex 100 (to lower trace metal contamination) and supplemented with high purity manganese was purified (162-fold) by heat treatment, ammonium sulfate precipitation, and chromatofocusing chromatography. The superoxide dismutase produced during aerobic growth in the same medium, but without manganese and supplemented with high purity iron, was similarly purified (220-fold). The molecular masses of each holoenzyme were approximately 43,000 with a subunit mass of 20,700, indicating that the enzymes were dimers of two equally sized subunits. The superoxide dismutase from manganese-grown cells was a manganese enzyme (MnSOD) containing 1.2 atoms of manganese and 0.25 atoms of iron/subunit. The superoxide dismutase from iron-grown cells was an iron enzyme (FeSOD) containing 0.07 atoms of manganese and 0.78 atoms of iron/subunit. The amino acid compositions of the MnSOD and the FeSOD were virtually identical, and their amino-terminal sequences were identical through the first 22 amino acids. **Dialysis** of the FeSOD with o-phenanthroline and sodium ascorbate generated aposuperoxide dismutase with 94% loss of activity; subsequent **dialysis** of apoenzyme with either manganese **sulfate** or **ferrous sulfate** reconstituted activity (recoveries of 37 and 30%, respectively). Electrophoretic determination of cytoplasmic radioiron distribution indicated that (during aerobic growth) manganese prevented insertion of iron into superoxide dismutase, although the iron levels of at least two other cytoplasmic fractions were not altered by manganese. Therefore, S. mutans used the same aposuperoxide dismutase to form either FeSOD or MnSOD, depending upon which metal was available in the culture medium. Such "cambialistic" enzymes (those capable of making a cofactor substitution) may represent a previously unrecognized family of superoxide dismutases.

L4 ANSWER 195 OF 225 MEDLINE
AN 86167623 MEDLINE
DN 86167623 PubMed ID: 2420760
TI Cytochemical visualization of anions in collagenous and elastic fiber-associated connective tissue matrix in neonatal and adult rat lungs using iron-containing stains.
AU Sannes P L
NC HL 24748 (NHLBI)
SO HISTOCHEMISTRY, (1986) 84 (1) 49-56.
Journal code: 0411300. ISSN: 0301-5564.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198605
ED Entered STN: 19900321
Last Updated on STN: 19970203
Entered Medline: 19860513
AB The cytochemical reactivity of pulmonary connective tissue matrix component in neonatal and adult rat was evaluated using high **iron** diamine (HID) to detect **sulfate** ester end groups and **dialyzed iron** (DI) to detect **sulfated** and carboxylated end groups of complex carbohydrates, including glycoproteins and glycosaminoglycans at the ultrastructural level. The HID reaction product, in the form of discrete 5-12 nm silver particles following appropriate intensification with thiocarbohydrazide-silver proteinate, was found associated with cell surfaces, the elastin component of elastic fibers, and at regular intervals along the length of collagen fibers in

large airways and deep lung interstitium. Staining was similar in adult and neonatal rats, except in areas where connective tissues were presumably still rapidly developing in the neonatal animals. Here large gaps or spaces containing filamentous structures were observed between collagen and elastic fibers. The distribution of DI-reactive sites was similar to that seen with HID with the exception of elastic fibers in which only the microfibrillar portion stained. The collagen-associated reaction was not regularly disposed like that stained with HID, but rather it formed a tight continuous density around the fiber. These results indicated the presence and location of glycoproteins and glycosaminoglycans in connective tissue ground substance regions prior to the full development of elastic and collagenous elements in neonatal pulmonary airways and parenchyma. They also demonstrate cytochemically the presence of a sulfate ester-containing complex sugar found associated with the elastin component of elastic fibers in the lung.

L4 ANSWER 196 OF 225 MEDLINE
AN 86058789 MEDLINE
DN 86058789 PubMed ID: 2933374
TI Ultrastructural cytochemistry of glycoconjugates in basophils from humans and animals.
AU Sakakibara H; Eguchi M
SO HISTOCHEMISTRY, (1985) 83 (4) 307-13.
Journal code: 0411300. ISSN: 0301-5564.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198601
ED Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860116
AB The distribution of glycoconjugates in the basophil granules of humans, guinea pigs, and rabbits was compared. The observation of acid mucopolysaccharides using the **dialyzed iron** method and of **sulfated** glycoconjugates using the high **iron** diamine method revealed three types of reactions in the basophil granules of all three species: granules showing a strong overall reaction, granules showing reaction only at their periphery, and granules showing no reaction. With regard to the relationship between maturation and the types of basophil granules, it appeared that, in general, there were many type-1 granules among immature basophils, but that these granules decreased in mature basophils as type-3 granules increased. The reaction patterns of periodate-reactive neutral glycoconjugates, as shown by the periodic acid-thiocarbohydrazide-silver proteinate (PA-TCH-SP) method, were different from those of acid mucopolysaccharides: the reaction of basophil granules was diffusely positive, and localization at the periphery was rarely observed. Therefore, unlike the acid mucopolysaccharides, it was difficult to classify the glycoconjugates into three types. However, as with acid mucopolysaccharides, there was a tendency for periodate-reactive glycoconjugates to decrease as maturation progressed. In terms of different species of animals, the reaction of periodate-reactive glycoconjugates with PA-TCH-SP was stronger in humans and rabbits than in guinea pigs.

L4 ANSWER 197 OF 225 MEDLINE
AN 85264753 MEDLINE
DN 85264753 PubMed ID: 4020849
TI The antagonism of tetracycline and ferric iron in vivo.

AU Miles A A; Maskell J P
SO JOURNAL OF MEDICAL MICROBIOLOGY, (1985 Aug) 20 (1) 17-26.
Journal code: 0224131. ISSN: 0022-2615.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198509
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19850909
AB To test the hypothesis that the in-vivo antibiotic action of tetracycline might be affected by ferric iron and the enhancement of infection by ferric iron by tetracycline, the actions of **intraperitoneal** antibiotic and local **ferric** ammonium **citrate**, given separately and together, were measured in the dorsal skin of guinea-pigs bearing lesions due to staphylococci, streptococci, a Proteus sp., an Erysipelothrix sp., Clostridium perfringens, Pseudomonas aeruginosa, Aeromonas hydrophila and Klebsiella pneumoniae. Tetracycline, given in two **intraperitoneal** doses of 25 mg/kg at 0 and 2 h after intracutaneous challenge, maintained plasma concentrations of 4-6 micrograms/ml for more than the first 4 h of infection, after which the local lesions had become largely insusceptible to the antibiotic. The intracutaneous injection of Fe 10 micrograms in a volume of 0.1 ml containing the bacteria was sufficient to enhance infection by those strains susceptible to this effect. The in-vivo efficacy of tetracycline was not always related to low MIC; a low MIC was sometimes associated with little action and a high MIC with moderate action. Sixteen organisms were tested. The iron diminished the tetracycline effect only feebly with one staphylococcal strain and the strain of E. rhusiopathiae. In only one case, with a strain of Proteus sp., was the tetracycline action grossly diminished. On the other hand, tetracycline diminished the enhancement effect of iron moderately with three strains of staphylococci and one strain each of K. pneumoniae, P. aeruginosa and C. perfringens, and strongly with two strains of staphylococci, a group-C streptococcus and one strain each of K. pneumoniae, E. rhusiopathiae and A. hydrophila. It is evident that the diminution of tetracycline action by moderate excess of readily available Fe , whether endogenous or administered, is an unlikely event (three instances among the 16 tested) whereas the diminution of the infection-enhancing effect of iron by tetracycline is much more likely (12 instances among the 16). Insofar as a decrease in iron available for enhancement of infection is valid evidence of a diminution of the iron available for necessary physiological processes of the subject treated, our results suggest that these processes might be affected by tetracycline.

L4 ANSWER 198 OF 225 MEDLINE
AN 85173350 MEDLINE
DN 85173350 PubMed ID: 3985629
TI Characterization of the O2-induced manganese-containing superoxide dismutase from Bacteroides fragilis.
AU Gregory E M
NC AI 15250 (NIAID)
SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (1985 Apr) 238 (1) 83-9.
Journal code: 0372430. ISSN: 0003-9861.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

EM 198505
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19850516
AB A manganese-containing superoxide dismutase (MnSOD) has been isolated from extracts of O2-induced Bacteroides fragilis. The enzyme, Mr 43,000, was a dimer composed of noncovalently associated subunits of equal size. A preparation whose specific activity was 1760 U/mg had 1.1 g-atoms Mn, 0.3 g-atoms Fe, and 0.2 g-atoms Zn per mol dimer. Exposing the enzyme to 5 M guanidinium chloride, 20 mM 8-hydroxyquinoline abolished enzymatic activity. **Dialysis** of the denatured apoprotein in buffer containing either Fe (NH4)2(SO4)2 or MnCl2 restored O2-. scavenging activity. The iron-reconstituted enzyme was inhibited 89% by 2 mM NaN3, similar to other Fe-containing superoxide dismutases. The Mn-reconstituted and native MnSOD were inhibited approximately 50% by 20 mM NaN3. Addition of ZnSO4 to **dialysis** buffer containing either the iron or manganese salt inhibited restoration of enzymatic activity to the denatured apoprotein. MnSOD migrated as a single protein band coincident with a single superoxide dismutase activity band in 7.5 or 10% acrylamide gels. Isoelectric focusing resulted in a major isozymic form with pI 5.3 and a minor form at pI 5.0. Mixtures of the MnSOD and the iron-containing superoxide (FeSOD), isolated from anaerobically maintained B. fragilis [E. M. Gregory and C. H. Dapper (1983) Arch. Biochem. Biophys. 220, 293-300], migrated as a single band on acrylamide gels and isoelectrically focused to a major protein band (pI 5.3) and a minor band at pI 5.0. The amino acid composition of MnSOD was virtually identical to that of the FeSOD. The data are consistent with synthesis of a single superoxide dismutase apoprotein capable of accepting either Mn or Fe to form the holoenzyme.

L4 ANSWER 199 OF 225 MEDLINE
AN 85141912 MEDLINE
DN 85141912 PubMed ID: 3975569
TI Iron absorption from red and white wines.
AU Bezwoda W R; Torrance J D; Bothwell T H; Macphail A P; Graham B; Mills W
SO SCANDINAVIAN JOURNAL OF HAEMATOLOGY, (1985 Feb) 34 (2) 121-7.
Journal code: 0404507. ISSN: 0036-553X.
CY Denmark
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198503
ED Entered STN: 19900320
Last Updated on STN: 19980206
Entered Medline: 19850325
AB Iron (3 mg) was added as ferrous sulphate to 2 dl red wine, white wine and 7% alcohol and its absorption was then measured in 38 fasting male subjects. (The original concentrations of iron in the two wines were low, being 1.01-1.08 mg/l (red wine) and 0.13-0.20 (white wine]. The geometric mean absorption from red wine was only 20% of that from the alcohol solution whilst more than 4 times as much was absorbed from white wine as from the alcohol. Direct comparison showed greater absorption from white wine (10.4%) than from red wine (4.4%). Removal of about 80% of the polyphenols in red wine increased the geometric mean iron absorption from 1.9% to 3.6%. In vitro experiments indicated that iron was less soluble and less **dialysable** in red wines than in white wines. This was possibly due to the binding of iron to polyphenols in red wines. Electrophoretic studies suggested that the iron in white wines was complexed to hydroxycarboxylic acids.

L4 ANSWER 200 OF 225 MEDLINE
AN 85003931 MEDLINE
DN 85003931 PubMed ID: 6207040
TI Complex carbohydrates at the ocular surface of the mouse: an ultrastructural and cytochemical analysis.
AU Wells P A; Hazlett L D
NC EY 02986 (NEI)
EY 04068 (NEI)
SO EXPERIMENTAL EYE RESEARCH, (1984 Jul) 39 (1) 19-35.
Journal code: 0370707. ISSN: 0014-4835.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198411
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19841102
AB Scanning electron microscopy (SEM) of mouse cornea and conjunctiva fixed with picric acid-paraformaldehyde-glutaraldehyde (PA-P-G) mixture revealed a thin layer of amorphous material covering the microvilli of the corneal surface cells. At the transmission electron microscopic (TEM) level, this layer of material stained positively with **dialyzed** iron, alcian blue and cationized ferritin, all of which are markers for anionic sulfate or carboxyl groups. The corneal surface was negative for high **iron** diamine, which specifically stains **sulfate** groups. These results indicate that the murine ocular surface is rich in carboxyl groups. Treatment with neuraminidase prior to fixation significantly reduced (P less than 0.005) cationic ferritin binding, suggesting that most of the carboxyl groups at the ocular surface are associated with sialic acid residues. The corneal surface also stained positively at the TEM level when a periodic acid-thiocarbohydrazide-silver protein sequence (PA-T-SP) was applied. This result indicated the presence of periodic acid-Schiff (PAS)-positive glycoprotein and glycolipid at the ocular surface.

L4 ANSWER 201 OF 225 MEDLINE
AN 84273730 MEDLINE
DN 84273730 PubMed ID: 6205427
TI Promotion of Pasteurella haemolytica infection in mice by iron.
AU Al-Sultan I I; Aitken I D
SO RESEARCH IN VETERINARY SCIENCE, (1984 May) 36 (3) 385-6.
Journal code: 0401300. ISSN: 0034-5288.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198409
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19840906
AB Mice given 60 micrograms **iron**, as aqueous **ferric** ammonium **citrate**, intravenously were more susceptible than untreated controls to **intraperitoneal** infection with T serotypes of Pasteurella haemolytica as shown by significant reductions in LD50 values. Iron injection has advantages over administration of bacteria suspended in mucin for studies of P haemolytica infection in mice.

L4 ANSWER 202 OF 225 MEDLINE
AN 84267769 MEDLINE

DN 84267769 PubMed ID: 6748038
TI Factors affecting the lethality of Campylobacter fetus subspecies jejuni in mice.
AU Stewart-Tull D E; Ng F K; Wardlaw A C
SO JOURNAL OF MEDICAL MICROBIOLOGY, (1984 Aug) 18 (1) 27-37.
Journal code: 0224131. ISSN: 0022-2615.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198409
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19840907
AB **Intraperitoneal** injection of Campylobacter fetus ss. jejuni into HAM/1CR mice was lethal, but viable counts of bacteria from whole body homogenates, organs and blood indicated that death was not due to sustained bacterial multiplication. Heat-killed organisms (5 X 10(9) cfu) injected into 7-day-old mice caused death within 24 h and this was shown to be due to endotoxin. Both ferric iron and heterologous lipopolysaccharide enhanced virulence; the LD50 was lowered from 1.8 X 10(9) cfu to 2.7 X 10(7) cfu when both were used. Three-day-old or adult animals survived challenge with Campylobacter fetus without clinical symptoms when challenged orally or by intravenous or **intraperitoneal** routes.

L4 ANSWER 203 OF 225 MEDLINE
AN 84263448 MEDLINE
DN 84263448 PubMed ID: 6746093
TI Role of heme compounds and haptoglobin in Vibrio vulnificus pathogenicity.
AU Helms S D; Oliver J D; Travis J C
SO INFECTION AND IMMUNITY, (1984 Aug) 45 (2) 345-9.
Journal code: 0246127. ISSN: 0019-9567.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198409
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19840906
AB An induced peritonitis model was employed in mice to determine whether heme-containing molecules enhance the lethality of infections by Vibrio vulnificus. The lethality of **intraperitoneal** (ip) inocula of the bacteria was increased by concurrent injections (ip) of hemoglobin, methemoglobin, or hematin, but not by myoglobin. Similar results were obtained in mice with phenylhydrazine-induced hemoglobinemia, in which after ip injections of V. vulnificus, a direct correlation between lethality and levels of plasma hemoglobin was observed. In vitro studies indicated that the growth of V. vulnificus, which was limited in an iron-poor medium, was enhanced by the addition of hemoglobin in a manner similar to an inorganic **iron** source, **ferric** ammonium **citrate**. These results suggest that V. vulnificus is capable of extracting iron from hemoglobin for use as a nutrilite, thereby promoting growth and increased lethality in the in vivo models. Further studies with human serum cultures demonstrated that the growth of V. vulnificus was not decreased when hemoglobin added to the serum was completely complexed with haptoglobin; these results are in opposition to those with cultures of Escherichia coli. These results are discussed relative to the capacity of

V. vulnificus to produce fatal human infections.

L4 ANSWER 204 OF 225 MEDLINE
AN 84236267 MEDLINE
DN 84236267 PubMed ID: 6734667
TI The role of ferritin in the intracellular distribution of gallium 67.
AU Nakamura K; Kawaguchi H; Shimizu K; Orii H
SO EUROPEAN JOURNAL OF NUCLEAR MEDICINE, (1984) 9 (5) 237-40.
Journal code: 7606882. ISSN: 0340-6997.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198408
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19840815
AB The binding of gallium 67 or iron 59 to ferritin in vitro was investigated using equilibrium **dialysis**. Gallium 67 did not bind to apo-ferritin until the protein was transformed into ferritin in the presence of **iron citrate**. Apotransferrin inhibited the binding of 67Ga to ferritin, especially in the presence of sodium bicarbonate and citrate, thus indicating that 67Ga has not gained access to ferritin from its complex with transferrin. Similar inhibition was observed for ferritin-59Fe. The release of 59Fe from its transferrin complex was enhanced by ATP, citrate, or ascorbic acid, while these reagents did not stimulate the dissociation of 67Ga from its transferrin complex. On the other hand, 67Ga injected intravenously in vivo was not found in the ferritin fractions of rat liver, kidney, and tumor. The difference between experimental results in vivo and in vitro supports the hypothesis that 67Ga in the cytoplasm is not labile enough to be bound to ferritin. We have indicated a significant role of ferritin in distinguishing between 67Ga and 59Fe in the cell, and provided some clues to interpret the chemical forms of 67Ga in the cytoplasm.

L4 ANSWER 205 OF 225 MEDLINE
AN 84181691 MEDLINE
DN 84181691 PubMed ID: 6713891
TI The assessment of iron stores in children on regular **dialysis** treatment.
AU Muller-Wiefel D E; Waldherr R; Feist D; van Kaick G
SO CONTRIBUTIONS TO NEPHROLOGY, (1984) 38 141-52.
Journal code: 7513582. ISSN: 0302-5144.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198406
ED Entered STN: 19900319
Last Updated on STN: 19970203
Entered Medline: 19840614

L4 ANSWER 206 OF 225 MEDLINE
AN 84006961 MEDLINE
DN 84006961 PubMed ID: 6352494
TI In vivo function of hemolysin in the nephropathogenicity of Escherichia coli.
AU Waalwijk C; MacLaren D M; de Graaff J
SO INFECTION AND IMMUNITY, (1983 Oct) 42 (1) 245-9.

[redacted] [redacted]

Journal code: 0246127. ISSN: 0019-9567.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198311
ED Entered STN: 19900319
Last Updated on STN: 19970203
Entered Medline: 19831123
AB The role of hemolysin in the nephropathogenicity of Escherichia coli was studied in a hematogenous pyelonephritis model in mice. The nephropathogenicity of a nonhemolytic, avirulent E. coli strain was increased by simultaneous injection with its hemolytic, nephropathogenic parent. This helper mechanism could be attributed to hemolysin, since the simultaneous injection of partially purified hemolysin gave a similar enhancement of nephropathogenicity. **Intraperitoneal** injection of hemoglobin or **iron sulfate** before intravenous challenge with this avirulent strain also led to increased virulence. The nephropathogenicity-enhancing effect of hemolysin is therefore supposed to depend on increasing the level of available iron in the host. Under conditions of plentiful iron, hemolysin production was repressed, as shown by in vitro growth experiments in the presence of exogenous iron. These results suggest that the production of hemolysin is regulated by feedback inhibition.

L4 ANSWER 207 OF 225 MEDLINE
AN 83213922 MEDLINE
DN 83213922 PubMed ID: 6189858
TI Iron and the liver: acute effects of iron-loading on hepatic heme synthesis of rats. Role of decreased activity of 5-aminolevulinate dehydrase.
AU Bonkowsky H L; Healey J F; Sinclair P R; Sinclair J F; Shedlofsky S I; Elder G H
NC CA 25012 (NCI)
SO JOURNAL OF CLINICAL INVESTIGATION, (1983 May) 71 (5) 1175-82.
Journal code: 7802877. ISSN: 0021-9738.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198307
ED Entered STN: 19900319
Last Updated on STN: 19980206
Entered Medline: 19830708
AB Acute iron loading of rats, by **intraperitoneal** administration of iron-dextran (500 mg Fe/kg body wt 18-20 h before killing) decreased by 30% the rate of conversion of 5-amino-[14C]levulinate ([14C]ALA) into heme as measured with a recently described procedure for liver homogenates (1981. Biochem. J. 198: 595-604). The decrease in conversion of labeled ALA into heme caused by iron loading was shown to be due to a 70-80% decrease in activity of ALA dehydrase. The decrease in activity of ALA dehydrase caused by iron loading was not associated with a decrease in hepatic concentrations of GSH, nor could it be reversed by addition of dithiothreitol, Zn2+ or chelators of Fe2+ and Fe3+. Addition of FeSO4, **ferric citrate**, or ferritin to homogenates of control liver had no effect of activity of ALA dehydrase. The decrease in activity of ALA dehydrase, caused by iron-dextran, was mirrored by a reciprocal increase in ALA synthase. Iron-dextran potentiated the induction of ALA synthase by allylisopropylacetamide. However, this potentiation could be

dissociated from the decrease in ALA dehydrase caused by iron loading.

L4 ANSWER 208 OF 225 MEDLINE
AN 83160800 MEDLINE
DN 83160800 PubMed ID: 6403509
TI Escherichia coli nitrate reductase subunit A: its role as the catalytic site and evidence for its modification.
AU Chaudhry G R; MacGregor C H
NC GM 25153 (NIGMS)
SO JOURNAL OF BACTERIOLOGY, (1983 Apr) 154 (1) 387-94.
Journal code: 2985120R. ISSN: 0021-9193.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198305
ED Entered STN: 19900318
Last Updated on STN: 19970203
Entered Medline: 19830505
AB Subunits A and B were isolated from purified nitrate reductase by preparative electrophoresis in low levels of sodium dodecyl **sulfate**. Nonheme **iron** and low levels of molybdenum were associated with isolated subunit A but not with isolated subunit B. After **dialysis** against a source of molybdenum cofactor, subunit A regained tightly bound molybdenum and concomitantly regained enzyme activity and reactivity with anti-nitrate reductase antiserum. Subunit B neither bound cofactor nor regained activity or reactivity with antiserum. These data indicate that subunit A contains the active site of the enzyme. Subunit A was also found to be modified posttranslationally in a similar fashion as is subunit B. This was determined by comparison of partial proteolytic digests and amino acid analyses of A subunits from precursor and membrane-bound forms of nitrate reductase.

L4 ANSWER 209 OF 225 MEDLINE
AN 83151865 MEDLINE
DN 83151865 PubMed ID: 6830329
TI Effect of a specific iron chelating agent on animal models of inflammation.
AU Blake D R; Hall N D; Bacon P A; Dieppe P A; Halliwell B; Gutteridge J M
SO ANNALS OF THE RHEUMATIC DISEASES, (1983 Feb) 42 (1) 89-93.
Journal code: 0372355. ISSN: 0003-4967.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198304
ED Entered STN: 19900318
Last Updated on STN: 19900318
Entered Medline: 19830407
AB Iron is an important catalyst of oxidative radical reactions and promotes the formation of the hydroxyl radical from the superoxide anion radical and hydrogen peroxide. The stimulatory effect of the hydroxyl radical on lipid peroxidation prompted the speculation that free iron may directly promote inflammation and that iron chelating agents may have useful anti-inflammatory properties. This hypothesis is tested in animal models of inflammation with a specific iron chelating agent, desferrioxamine. At low doses (6 . 6 mg/kg) **intraperitoneal** desferrioxamine stimulated the induction of acute foot pad swelling in rats by monosodium urate but at higher doses (above 200 mg/kg) it suppressed this

inflammatory reaction. A similar anti-inflammatory effect was observed in carrageenan-induced foot pad swelling. In guinea-pigs in which a Glynn-Dumonde synovitis was induced with bovine gammaglobulin, desferrioxamine (100 mg/kg) stimulated the acute inflammatory induction phase of this chronic allergic monoarthritis model. Repeated administration of desferrioxamine (100 mg/kg) from the seventh to the twelfth day after intra-articular challenge with bovine gammaglobulin markedly depressed the chronic inflammatory phase. In-vitro experiments suggest that desferrioxamine inhibits iron-catalysed lipid peroxidation when it is poorly saturated with iron, but loses this effect when it is iron saturated. Such an effect may explain our results with desferrioxamine in the animal studies and suggests that effective iron chelation and its removal may modify the inflammatory process in man.

L4 ANSWER 210 OF 225 MEDLINE
AN 83151568 MEDLINE
DN 83151568 PubMed ID: 6830240
TI Isolation of iron-containing superoxide dismutase from Bacteroides fragilis: reconstitution as a Mn-containing enzyme.
AU Gregory E M; Dapper C H
NC AI15250 (NIAID)
AI15465 (NIAID)
SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (1983 Jan) 220 (1) 293-300. Journal code: 0372430. ISSN: 0003-9861.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198304
ED Entered STN: 19900318
Last Updated on STN: 19970203
Entered Medline: 19830415
AB Superoxide dismutase from the anaerobe Bacteroides fragilis has been purified to apparent homogeneity. The protein, Mr 42,000, is a dimer of equally sized subunits joined by noncovalent interactions. Metal analysis of the native enzyme revealed 1.8-1.9 g-atoms Fe, 0.2 g-atoms Zn, and less than 0.05 g-atoms Mn per mole dimer in a preparation whose specific activity was 1200 U/mg. Exposure of the enzyme to guanidinium chloride plus 8-hydroxyquinoline (T. Kirby, J. Blum, I. Kahane, and I. Fridovich, 1980, Arch. Biochem. Biophys. 201, 551-555) resulted in complete loss of enzymatic activity. Activity could be restored by **dialysis** of the denatured apoprotein against Tris buffer containing either **ferrous** ammonium **sulfate** or manganous chloride. The Fe-reconstituted enzyme was inhibited by 1 mM azide and inactivated by H2O2 in a manner similar to the native enzyme. Mn-reconstituted enzyme was inhibited by azide but resisted inactivation by H2O2 comparable to other purified manganese-containing superoxide dismutases. The manganese reconstituted protein contained approximately 1 gm-atom Mn/mol dimer. Zn ion potently inhibited reconstitution of the denatured apoprotein by either Mn or Fe and bound to the protein with a stoichiometry of 2-3 g-atoms/mol dimer.

L4 ANSWER 211 OF 225 MEDLINE
AN 83089143 MEDLINE
DN 83089143 PubMed ID: 7177278
TI Serum ferritin in haemodialysis.
AU Marco-Franco J E; Alarcon A; Morey A; Piza C; Bestard J; Mairata S; Galmes A; Dalmau M
SO NEPHRON, (1982) 32 (1) 57-9.

[redacted] [redacted]

Journal code: 0331777. ISSN: 0028-2766.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198302
ED Entered STN: 19900317
Last Updated on STN: 19900317
Entered Medline: 19830214
AB A rapid assay for serum ferritin was performed in old and new patients undergoing regular **dialysis** treatment. The mean values were higher in the patients, especially the older patients, than in the controls. The normal differences in serum ferritin with age and sex were absent in the patients. We attribute these changes to iron loss and multiple transfusions received. Tissue iron was well reflected by serum ferritin concentration even during iron treatment, unless the intravenous route was used. Although an acceptable rise of serum ferritin was obtained, results of the iron administration have been poor.

L4 ANSWER 212 OF 225 MEDLINE
AN 83056953 MEDLINE
DN 83056953 PubMed ID: 6982898
TI Translational control of ferritin synthesis by iron in embryonic reticulocytes of the bullfrog.
AU Shull G E; Theil E C
NC AM 20251 (NIADDK)
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1982 Dec 10) 257 (23) 14187-91.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198301
ED Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19830119
AB The regulation of ferritin synthesis by iron was examined in the reticulocytes of bullfrog tadpoles where the induction was 40- to 50-fold, increasing from 0.17 +/- 0.05% of total protein synthesis ([3H]leucine incorporation in cell suspension) to 7.4 +/- 1.6% following **intraperitoneal** injection of **ferric** ammonium **citrate**. No significant difference was observed between the levels of ferritin mRNA in control or iron-induced cells, determined by translation of isolated mRNA in a wheat germ system, demonstrating that ferritin induction by iron occurs by a post-transcriptional mechanism. Total protein synthesis in the wheat germ system was half-saturating at 10 micrograms of mRNA/ml whereas ferritin synthesis increased linearly up to 40 micrograms of mRNA/ml, demonstrating that the ferritin mRNA is translated with high efficiency relative to the total proteins synthesized. Studies with the cap analogue 7-methylguanosine-5'-monophosphate, suggest that cap binding is not directly involved in the high translational efficiency of the ferritin mRNA in the wheat germ system. The results indicate that iron-modulated changes in the availability of ferritin mRNA for translation, coupled with the high translational efficiency of the ferritin message, can account for the induction of ferritin synthesis by iron in embryonic erythroid cells.

L4 ANSWER 213 OF 225 MEDLINE
AN 83018892 MEDLINE

DN 83018892 PubMed ID: 7124337
TI Experiments and ultrastructural investigations on the mouse embryo during early teratogen-sensitive stages.
AU Kuchta B
SO ACTA ANATOMICA, (1982) 113 (3) 218-25.
Journal code: 0370272. ISSN: 0001-5180.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198212
ED Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19821202
AB The effect of **iron gluconate** on the mouse embryo was studied in early embryonic development before the chorioallantoic placenta was established. **Iron gluconate** is teratogenic to mouse embryos after **intraperitoneal** application to pregnant mice on the 8th and 9th days of gestation. The most pronounced defect is exencephaly. As seen with the electron microscopy, **iron gluconate** enters the cells of the yolk sac. The excessive uptake of **iron gluconate** in the cells of the yolk sac alters these cells for a short period. **Iron gluconate** is visible, neither in the cells of the head process nor in the cells of the neuroectoderm, but the neuroectodermal cells show necrotic degeneration. Two different types of necrosis can be found; these appear at a time (13-22 h after maternal treatment) when the yolk sac cells are normalized again.

L4 ANSWER 214 OF 225 MEDLINE
AN 82218492 MEDLINE
DN 82218492 PubMed ID: 7087599
TI [Evaluation of iron therapy in patients in long-term haemodialysis (author's transl)].
Valoracion de la ferroterapia en pacientes en hemodialisis.
AU Serra A; Morlans M; Olmos A; Camps J; Rodriguez J A; Carreras A; Soriano B; Bartolome J; Piera L
SO MEDICINA CLINICA, (1982 Apr 16) 78 (8) 313-7.
Journal code: 0376377. ISSN: 0025-7753.
CY Spain
DT Journal; Article; (JOURNAL ARTICLE)
LA Spanish
FS Priority Journals
EM 198208
ED Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19820807

L4 ANSWER 215 OF 225 MEDLINE
AN 82180118 MEDLINE
DN 82180118 PubMed ID: 6803616
TI Cell specialization in collecting tubules of the guinea pig kidney: carbonic anhydrase activity and glycosaminoglycan production in different cells.
AU Sato A; Spicer S S
NC AM-10956 (NIADDK)
AM-11028 (NIADDK)
SO ANATOMICAL RECORD, (1982 Apr) 202 (4) 431-43.
Journal code: 0370540. ISSN: 0003-276X.

[redacted] [redacted]

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198206
ED Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19820621
AB The distribution of complex carbohydrates has been investigated cytochemically at the light and electron microscope levels in collecting ducts of the guinea pig kidney. The **dialyzed** iron method demonstrated acidic complex carbohydrate ultrastructurally on the outer surface of the apical and the basolateral plasmalemma of the principal cells and in their maturing Golgi cisternae and secretory granules. Glycoconjugate in these sites stained for **sulfate** esters with the high **iron** diamine method but lacked reactivity toward the periodic acid-thiocarbohydrazide-silver proteinate (PA-T-SP) sequence for visualizing vic glycol-containing glycoprotein. Lability to testicular hyaluronidase and resistance to sialidase identified the Glycosaminoglycan (GAG) in principal cell granules and the plasmalemmae as a chondroitin sulfate. In contrast, intercalated cells of the collecting ducts failed to stain with the cationic reagents, but showed light PA-T-SP reactivity demonstrative of neutral glycoprotein in the glycocalyx of the apical plasmalemma. Immunostaining with the immunoglobulin-enzyme bridge procedure localized carbonic anhydrase selectively to the intercalated cells. The ultrastructural and cytochemical observations on the guinea pig collecting ducts implicate intercalated cells in fluid and electrolyte transport and principal cells in secretion of a chondroitin sulfate to the tubule lumen and intercellular space.

L4 ANSWER 216 OF 225 MEDLINE
AN 82156998 MEDLINE
DN 82156998 PubMed ID: 6278917
TI Components of fiber bind iron in vitro.
AU Fernandez R; Phillips S F
SO AMERICAN JOURNAL OF CLINICAL NUTRITION, (1982 Jan) 35 (1) 100-6.
Journal code: 0376027. ISSN: 0002-9165.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198205
ED Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19820521
AB Interactions among fiber, inorganic iron, and substances known to chelate iron were examined in vitro. Cellulose, neutral and acid fractions of lignin, psyllium mucilage, and pectin were incubated with 59Fe SO4 at various pH's, in various concentrations, and in the presence or absence of known chelators of **iron** including ascorbate, **citrate**, cysteine, fructose, and EDTA. Insoluble components of fiber were tested in a precipitation-centrifugation system, soluble components were tested by equilibrium **dialysis**. Lignins and psyllium mucilage had the greatest capacity to bind ferrous iron under conditions that approximated those of the proximal intestine postprandially; cellulose and pectin were less potent. Dissociation constants of binding were similar for several components, suggesting the existence of comparable binding sites in different components of fiber. Citrate and EDTA inhibited the binding of iron markedly but other chelators were much less effective. These

reactions among fiber, inorganic iron, and other constituents of food may influence the bioavailability of dietary iron and the simple systems described here offer a means of dissecting interactions that are complex in vivo.

L4 ANSWER 217 OF 225 MEDLINE
AN 79195078 MEDLINE
DN 79195078 PubMed ID: 448061
TI Cytochemical properties of mitochondria in the gastric parietal cell.
AU Sannes P L; Katsuyama T; Spicer S S
SO JOURNAL OF HISTOCHEMISTRY AND CYTOCHEMISTRY, (1979 Apr) 27 (4) 873-7.
Journal code: 9815334. ISSN: 0022-1554.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197909
ED Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19790901
AB The matrix of some mitochondria in gastric parietal cells of rat and guinea pig evidenced affinity for the high **iron** diamine method which localizes **sulfated** complex carbohydrates selectively by light and electron microscopy. Such staining has not been observed elsewhere in the stomach. The high iron diamine reactive mitochondria about equaled in number those which were unreactive, and the two groups were indistinguishable morphologically. The distinction was not apparent either when mitochondria were stained by other cytochemical procedures including **dialyzed** iron for acidic complex carbohydrates, 3-3' diaminobenzidine-H2O2 at pH 6.0 for cytochrome oxidase, and Kominick's pyroantimonate osmium tetroxide for antimonate precipitable cations. The **dialyzed** iron method stained acid glycoconjugates in the outer intermembrane space in parietal cell mitochondria. These mitochondria stained more strongly with **dialyzed** iron than have any others examined heretofore with this method and comprised the only reactive mitochondria in the stomach. Parietal cell mitochondria also stained strongly for cytochrome oxidase but those of other gastric cells failed to evidence this reactivity.

L4 ANSWER 218 OF 225 MEDLINE
AN 79021576 MEDLINE
DN 79021576 PubMed ID: 698186
TI Iron exchange between ferritin and transferrin in vitro.
AU Harris D C
SO BIOCHEMISTRY, (1978 Jul 25) 17 (15) 3071-8.
Journal code: 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197812
ED Entered STN: 19900314
Last Updated on STN: 19970203
Entered Medline: 19781227
AB The transfer of iron between horse spleen [55Fe]ferritin and human apotransferrin or [59Fe]transferrin in homogeneous solution was investigated. Transfer between the two proteins in the presence of citrate, ATP, or ascorbate occurs in both direction, but the net flow is always from ferritin to transferrin. Ferritin which is ca. 1/3 to 1/2

saturated with iron appears to be most reactive. Chemically prepared apoferritin does not accept **iron** from diferric transferrin. **Citrate**-mediated transfer of **iron** from ferritin to apotransferrin is first order with respect to ferritin, zero order with respect to transferrin, and has a complex dependence upon **citrate** concentration. Direct transfer of **iron** from native or reconstituted ferritin to apotransferrin in the absence of any identifiable mediating agent was observed to occur at about half the rate attained in the presence of 1 mM **citrate**. No transfer of **iron** between the two proteins occurs across a **dialysis** membrane in the absence of a mediating agent. No binding of transferrin and ferritin to each other was demonstrable. One possible explanation for these observations is that iron from the core of ferritin is in equilibrium with iron near the outer surface of the protein, where the metal would be available to transferrin.

L4 ANSWER 219 OF 225 MEDLINE
AN 77140050 MEDLINE
DN 77140050 PubMed ID: 14890
TI Bacteriostatic effect of human milk and bovine colostrum on Escherichia coli: importance of bicarbonate.
AU Griffiths E; Humphreys J
SO INFECTION AND IMMUNITY, (1977 Feb) 15 (2) 396-401.
Journal code: 0246127. ISSN: 0019-9567.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197705
ED Entered STN: 19900313
Last Updated on STN: 19950206
Entered Medline: 19770525
AB At pH 7.4 and in the presence of NaHCO3, human milk and bovine colostrum inhibited the growth of Escherichia coli O111. Adding sufficient iron to saturate the iron-binding capacity of the lactoferrin present in the milk or colostrum prevented bacteriostasis. At pH 6.8 neither molk nor colostrum inhibited E. coli 0111. Adjusting the pH to 7.4 with NaHCO3 resulted in the development of bacteriostatic activity. Adjusting the pH to 7.4 with NaOH was ineffective. **Dialyzed** colostrum and milk inhibited bacterial growth at pH 6.8 in the absence of added NaHCO3; addition of **citrate** or **iron** abolished bacteriostasis. The chromatographic elution profile of tyrosyl-transfer ribonucleic acid (tRNA) from iron-replete E. coli differs significantly from that of tyrosyl-tRNA from iron-deficient organisms. Examination of the elution profile tyrosyl-tRNA from E. coli 0111 growing in colostrum without added NaHCO3 showed that such bacteria were fully replete in iron. The nature of the elution profile of tyrosyl-tRNA also showed that iron was freely available to the bacteria when citrate was added to **dialyzed** colostrum but not available in its absence, even at pH 6.8. Results support the idea that the bacteriostatic action of milk and colostrum, due to the combined action of antibody and lactoferrin, depends on the addition of bicarbonate to counteract the **iron**-mobilizing effect of the **citrate** normally present in these secretions.

L4 ANSWER 220 OF 225 MEDLINE
AN 76209259 MEDLINE
DN 76209259 PubMed ID: 1227766
TI Iron poisoning in children.
AU Greengard J

SO CLINICAL TOXICOLOGY, (1975) 8 (6) 575-97.
Journal code: 0205535. ISSN: 0009-9309.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 197608
ED Entered STN: 19900313
Last Updated on STN: 19970203
Entered Medline: 19760823
AB In the present state of our knowledge it must be concluded that the outstanding anatomic changes directly attributable to acute iron poisoning are in the gastrointestinal tract and the liver. Both seem to be due to the direct action of iron upon living cells. In the stomach and small bowel the changes appear to be due to the corrosive effect of the iron salt whether in solution or in tablet form. And the anion may indeed play the predominant role as demonstrated by the observation of the severe corrosive changes observed when accumulations of **ferrous sulfate** tablets occur in areas of the stomach or small bowel. That the mucosal barrier to iron is broken down seems incontrovertible. And it is no longer tenable to assume that the severe complications of iron poisoning are due to the local necroses in the gastrointestinal tract. The liver, being the first parenchymal organ encountered by absorbed iron, is involved to a varying degree. The anatomic changes can progress to frank necrosis in severe cases. And even in those where overt histologic damage is not demonstrable, alterations in biochemical function occur. Anatomic changes in other parenchymal organs are probably largely secondary to dehydration, shock, hemorrhage, and infection. But the possibility of disordered enzyme systems here as well must be borne in mind though so far not demonstrated. In severe cases where hemorrhages play so large a role, albeit infrequently, the specific action of iron in interference with coagulation mechanisms is of the utmost importance. The role of therapy with deferoxamine in production of shock is discussed below. In this connection breakdown of the mucosal barrier with release of apoferritin and ferritin as a hypotensive mechanism has also been suggested by Smith.

L4 ANSWER 221 OF 225 MEDLINE
AN 76084245 MEDLINE
DN 76084245 PubMed ID: 1239149
TI [Effect of adjuvants on the cellular function of the monocytic phagocytosing system].
Vliianie ad"iuvantov na funktsiiu kletok monotsitarnoi fagotsitiruiushchei sistemy.
AU Bubashvili M E; Khasman E L; Uchitel' I Ia
SO ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, (1975 Aug) (8) 116-22.
Journal code: 0415217. ISSN: 0372-9311.
CY USSR
DT Journal; Article; (JOURNAL ARTICLE)
LA Russian
FS Priority Journals
EM 197603
ED Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19760301
AB The authors studied the effect of adjuvants differing by origin and physico-chemical nature (complete Freund's adjuvant, S. typhi endoxin, cadmium **sulfate, iron** trichloride) on the ingestion and digestion of erythrocytes of the sheep by the cells of monocytic

phagocytizing system, on the persistence of the antigen in these cells, its complexation with the RNA-macrophages and the function of their lysosomal apparatus. The adjuvants change the phagocytizing capacity of the macrophages only in their administration in vivo. Administration to the animals of Freund adjuvant and of the S. typhic endotoxin somewhat increased the ingestion of the antigens, whereas the administration of FeCl3 and CdSO4 failed to change it or even somewhat decreased it. The capacity of ingestion of the antigen in vitro in macrophages obtained from the animals treated with the adjuvants was changed in comparison with the normal. All the adjuvants tested produced a marked action on the lysosomal apparatus of the cells of the monocytic phagocytizing system: they changed the activity of catepsin, promoted the accumulation and the retention in the lysosomes of the highly immunogenic fractions of the antigen, and increased the permeability (except the CdSO4 of the lysosomal membranes in the cells of the antigen binding with the RNA of the cells of the **peritoneal** exudate or the splenic cells.

L4 ANSWER 222 OF 225 MEDLINE
AN 75133464 MEDLINE
DN 75133464 PubMed ID: 1123323
TI Isolation and characterization of sulfhydryl oxidase from bovine milk.
AU Janolino V G; Swaisgood H E
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1975 Apr 10) 250 (7) 2532-8.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197507
ED Entered STN: 19900310
Last Updated on STN: 19970203
Entered Medline: 19750702
AB A method is described for purification of sulfhydryl oxidase from bovine milk which consistently yields preparations with greater than 3000-fold purification over skim milk. A concentration-dependent association-dissociation of the enzyme was adapted to the development of an isolation procedure. Purified preparations exhibited two zones, both of which displayed activity, upon polyacrylamide disc gel electrophoresis, but only one zone following disc gel electrophoresis in sodium dodecyl sulfate. Its mobility indicated a subunit weight of 89,000. Several lines of evidence suggest that iron is an integral part of the enzyme. Treatment of the enzyme with EDTA resulted in complete loss of activity which could be subsequently restored by **dialysis** against 1 muM **ferrous sulfate**. Furthermore, atomic absorption analysis and neutron activation analysis of separate enzyme preparations each indicated 0.5 atom of iron per subunit. Chemical analyses of sulfhydryl oxidase accounted for 97% of the sample weight, of which 89% could be attributed to amino acid residues and 11% to carbohydrate residues. Five half-cystine residues per subunit were indicated by cysteic acid analysis and by sulfhydryl group determination following reaction with sodium borohydride. Comparison of this value to the total sulfhydryl groups without reduction tentatively suggests the presence of one disulfide bond. Sulfhydryl oxidase was found to catalyze the oxidation of sulfhydryl groups in both small compounds and proteins, using O2 as oxidant and producing, in equimolar quantities, H2O2 and the corresponding disulfide. A Michaelis constant of 90 muM was obtained using reduced glutathione as substrate, under conditions of optimal pH and temperature, viz., pH 7.0 and 35 degrees. Substrate inhibition was apparent at GSH concentrations above 0.8 mM. In the presence of sulfhydryl oxidase, reductively denatured

RNase was reoxidized and fully reactivated within 1 hour, whereas in the absence of the oxidase under otherwise identical conditions, full recovery of RNase activity required 24 hours. The presence of reducing agent was not required for this activity, nor was prior reduction of the sulfhydryl oxidase. Based on the observed activity, it appears that the enzyme could be involved in the biosynthesis of disulfide bonds in certain proteins.

L4 ANSWER 223 OF 225 MEDLINE
AN 75114106 MEDLINE
DN 75114106 PubMed ID: 1090522
TI Inhibition of Escherichia coli by bovine colostrum and post-colostral milk. II. The bacteriostatic effect of lactoferrin on a serum susceptible and serum resistant strain of E. coli.
AU Reiter B; Brock J H; Steel E D
SO IMMUNOLOGY, (1975 Jan) 28 (1) 83-95.
Journal code: 0374672. ISSN: 0019-2805.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197505
ED Entered STN: 19900310
Last Updated on STN: 19970203
Entered Medline: 19750528
AB Two strains of Escherichia coli were inhibited by complement-inactivated cow serum and to a lesser extent by precolostral calf serum devoid of specific antibodies. They were not inhibited by undiluted colostral whey or milk but colostral whey became bacteriostatic after **dialysis** or dilution in Kolmer saline and addition of precolostral calf serum or lactoferrin. The inhibition in all these fluids was due to iron-binding proteins (transferrin or lactoferrin). Undiluted **dialysed** milk was not inhibitory because of its low content of lactoferrin but became inhibitory after addition of 1 mg/ml of lactoferrin. The lack of inhibition in undiluted whey is due to the high concentration of citrate in colostral whey (and milk) and it is suggested that **citrate** competes with the **iron**-binding proteins for iron and makes it availabe to the bacteria. Addition of bicarbonate, which is required for the binding of iron by transferrin and lactoferrin, can overcome the effect of citrate; hence, the bacteriostatic effect of cow serum and precolostral calf serum is due to the presence of both transferrin and bicarbonate as well as the low lefel of citrate.

L4 ANSWER 224 OF 225 MEDLINE
AN 70264371 MEDLINE
DN 70264371 PubMed ID: 4915899
TI Enhancement of Escherichia coli infection and endotoxic activity by hemoglobin and **ferric** ammonium **citrate**.
AU Bornside G H; Bouis P J Jr; Cohn I Jr
SO SURGERY, (1970 Aug) 68 (2) 350-5.
Journal code: 0417347. ISSN: 0039-6060.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 197010
ED Entered STN: 19900101
Last Updated on STN: 19970203
Entered Medline: 19701006

L4 ANSWER 225 OF 225 MEDLINE
AN 64077253 MEDLINE
DN 64077253
TI **FERROUS SULFATE** POISONING: A REVIEW, CASE SUMMARIES, AND THERAPEUTIC REGIMEN.
AU COVEY T J
SO JOURNAL OF PEDIATRICS, (1964 FEB) 64 218-26.
ISSN: 0022-3476.
CY United States
DT Journal
LA English
FS OLDMEDLINE
EM 196407
ED Entered STN: 19990716
Last Updated on STN: 19990716

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L5 ANSWER 1 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2002:391211 CAPLUS
DN 137:682
TI Sodium **ferric gluconate** complex in **hemodialysis** patients: Adverse reactions compared to placebo and iron dextran
AU Michael, Beckie; Coyne, Daniel W.; Fishbane, Steven; Folkert, Vaughn; Lynn, Robert; Nissenson, Allen R.; Agarwal, Rajiv; Eschbach, Joseph W.; Fadem, Stephen Z.; Trout, J. Richard; Strobos, Jur; Warnock, David G.
CS Thomas Jefferson University, Philadelphia, PA, USA
SO Kidney International (2002), 61(5), 1830-1839
CODEN: KDYIA5; ISSN: 0085-2538
PB Blackwell Publishing, Inc.
DT Journal
LA English
AB Parenteral iron is often required by **hemodialysis** patients to maintain adequate iron stores. Until recently, the only available form of i.v. iron was iron dextran, which is assocd. with significant adverse reactions, including anaphylaxis and death. Sodium **ferric gluconate** complex (SFGC) was recently approved for use in the U.S. under FDA's priority drug review. This Phase IV study was designed to evaluate the safety of a single dose of i.v. SFGC as compared to placebo and a historical iron dextran control. This multicenter, crossover, randomized, double blind, placebo-controlled prospective comparative study was performed in **hemodialysis** patients requiring at least 125 mg of elemental iron. The historical control was obtained from a meta-anal. of four publications examg. outcomes in patients exposed to iron dextran. SFGC naive patients were administered SFGC without a test dose, undiluted, at a rate of 125 mg over 10 min, and compared to placebo comprising bacteriostatic saline. A total of 2534 patients were enrolled. The incidence of drug intolerance (an adverse event precluding re-exposure) was significantly less [0.44%, confidence interval (CI) 0.21 to 0.71%] after SFGC as compared to the iron dextran control (2.47%, CI 1.87 to 3.07%, P < 0.0001), but higher than after placebo (0.1%, P = 0.02). There was no difference found between SFGC and placebo in serious adverse events. A single life-threatening event occurred after SFGC (0.04%, CI 0.00 to 0.22%), which was significantly less than following iron dextran (0.61%, CI 0.36 to 0.86%), P = 0.0001. SFGC is well tolerated when given by i.v. push without a test dose. SFGC has a significantly lower incidence of drug intolerance and life-threatening events as compared to previous studies using iron dextran. The routine use of iron dextran in **hemodialysis** patients should be discontinued.
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2002:200405 CAPLUS
DN 136:350367
TI An open-label, crossover study of a new phosphate-binding agent in haemodialysis patients: **Ferric citrate**
AU Yang, Wu-Chang; Yang, Chwei-Shiun; Hou, Chun-Chen; Wu, Tsai-Hung; Young, Eric W.; Hsu, Chen H.
CS Division of Nephrology, Department of Medicine, Veteran's General Hospital-Taipei and College of Medicine, National Yang-Ming University, Taipei, Taiwan
SO Nephrology, Dialysis, Transplantation (2002), 17(2), 265-270

CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB Hyperphosphatemia contributes to secondary hyperparathyroidism and renal osteodystrophy in patients with end-stage renal disease (**ESRD**). Calcium salts are widely employed to bind dietary phosphate (P) but they may promote pos. net calcium balance and metastatic calcification. We recently reported that ferric compds. bind intestinal phosphate in studies of normal and azotemic rats. To extend this observation, we performed an open-label, random order, crossover comparison study of **ferric citrate** and calcium carbonate in haemodialysis patients from two teaching hospitals. The study sample consisted of 23 women and 22 men with an av. age of 52.5.+-.11.8 (SD) years and an av. wt. of 54.5.+-.10.7 kg. All forms of iron therapy were discontinued. Two weeks before the study, patients were instructed to discontinue all P-binding agents. The patients were randomly assigned to receive either calcium carbonate (3 g/day) or **ferric citrate** (3 g/day) for 4 wk followed by a 2 wk washout period, and then crossed over to the other P-binding agent for 4 wk. From a baseline concn. of 5.6.+-.1.5 mg/dL, the serum P increased during the washout period to 7.2.+-.1.9 mg/dL prior to calcium carbonate treatment, and to 6.7.+-.1.9 mg/dL prior to **ferric citrate** treatment. The serum P concn. fell significantly during treatment with both calcium carbonate (7.2.+-.1.9 to 5.2.+-.1.5 mg/dL, P<0.0001) and **ferric citrate** (6.7.+-.1.9 to 5.7.+-.1.6 mg/dL, P<0.0001). The results were not influenced by order of treatment. Under the conditions of the study protocol, **ferric citrate** was less effective than calcium carbonate at lowering the serum phosphate concn. The serum Ca concn. increased during treatment with calcium carbonate but not **ferric citrate**. **Ferric citrate** treatment did not affect the serum concn. of aluminum. **Ferric citrate** treatment was assocd. with mild and generally tolerable gastrointestinal symptoms. **Ferric citrate** shows promise as a means of lowering the serum phosphate concn. in haemodialysis patients. Further studies are needed to find the optimal dose.
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2002:77991 CAPLUS
DN 136:288799
TI Reduction of recombinant human erythropoietin maintenance dose by supplementation with a low-dose iron preparation, given intravenously
AU Mitsuiki, Koji; Harada, Atsumi; Miyata, Yasuji
CS The Kidney Center, Matsuyama Red Cross Hospital, Matsuyama, 790-0826, Japan
SO Clinical and Experimental Nephrology (2001), 5(4), 228-233
CODEN: CENPFV; ISSN: 1342-1751
PB Japanese Society of Nephrology
DT Journal
LA English
AB Background. In chronic **hemodialysis** patients who showed iron deficiency, the authors investigated whether the maintenance dose of recombinant human erythropoietin (rHuEPO) could be reduced by long-term i.v. supplementation with a low-dose iron prepn. Methods. In 26 chronic **hemodialysis** patients who were receiving treatment with a maintenance dose of rHuEPO, without an iron supplement, who showed iron deficiency, the i.v. administration of 40 mg of chondroitin

sulfate-iron colloid once per wk after **dialysis** was initiated. The authors obsd. the patients' course for 1 yr and investigated the redn. in the rHuEPO dose. Results. In the 26 patients, the rHuEPO dose was reduced by 25% after 6 mo, and the redn. increased to 32% in the twelfth month. The patients were divided, according to the maintenance dose of rHuEPO received before the iron supplementation into high-, intermediate-, and low-dose groups (9000, 4500, and 2250IU/wk, resp.), and the results were analyzed. A marked redn. of the rHuEPO dose, of 46% in the twelfth month, was obtained in the intermediate-dose group. In the high- and low-dose groups, the redns. of the rHuEPO dose were low. Conclusions. In chronic **hemodialysis** patients with iron deficiency who are being treated with a maintenance dose of rHuEPO, the i.v. administration of a low dose of iron (40 mg/wk) led to a redn. in the rHuEPO dose. This effect was marked in patients in the intermediate-dose rHuEPO group, i.e., 4500IU/wk, which is the most frequently employed maintenance dose in Japan. This therapeutic method can be recommended from a health-care economics perspective.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2001:585965 CAPLUS
DN 135:339764
TI The role of iron status markers in predicting response to intravenous iron in haemodialysis patients on maintenance erythropoietin
AU Tessitore, Nicola; Solero, Giovanni Pietro; Lippi, Giuseppe; Bassi, Antonella; Faccini, Giovanni Battista; Bedogna, Valeria; Gammaro, Linda; Brocco, Giorgio; Restivo, Giuseppe; Bernich, Patrizia; Lupo, Antonio; Maschio, Giuseppe; Padovani, Enis
CS Divisione di Nefrologia Azienda Ospedaliera di Verona, Verona, Italy
SO Nephrology, Dialysis, Transplantation (2001), 16(7), 1416-1423
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB Iron deficiency (ID) is the main cause of hyporesponsiveness to erythropoietin in **hemodialysis** patients and its detection is of value since it is easily cor. by i.v. iron. Markers of iron supply to the erythron, including erythrocyte zinc protoporphyrin (Er-ZPP), percentage of hypochromic erythrocytes (Hypo), reticulocyte Hb content (CHr) and sol. transferrin receptor (sTfR), may be more accurate predictors of ID than ferritin (Fer) and transferrin satn. (TSat), but relative diagnostic power and best threshold values are not yet established. In 125 **hemodialysis** patients on maintenance erythropoietin, the diagnostic power of the above parameters was evaluated by ROC curve, multivariate regression, and stepwise discriminant analyses. Diagnosis of ID was based on Hb response to i.v. **iron** (992 mg as sodium **ferric gluconate** complex over an 8-wk period). Fifty-one patients were considered iron deficient (Hb increase by 1.9.+-.0.5 g/dL) and 74 as iron replete (Hb increase by 0.4.+-.0.3 g/dL). ROC curve anal. showed that all tests had discriminative ability with the following hierarchy: Hypo (area under curve W=0.930, efficiency 89.6% at cut-off >6%), CHr (W=0.798, efficiency 78.4% at cut-off 29 pg), sTfR (W=0.783, efficiency 72.4% at cut-off >1.5 mg/l), Er-ZPP (W=0.773, efficiency 73.0% at cut-off >52 .mu.mol/mol heme), TSat (W=0.758, efficiency 70.4% at cut-off <19%) and ferritin (W=0.633, efficiency 64.0% at cut-off <50 ng/mL). Stepwise discriminant anal. identified Hypo as the only variable with independent diagnostic value, able to classify 87.2% of patients correctly. Addnl. tests did not substantially improve diagnostic

efficiency of Hypo >6% alone. In **hemodialysis** patients on maintenance erythropoietin, Hypo >6% is the best currently available marker to identify those who will improve their response after i.v. iron. Cost-effectiveness suggests that this parameter should be a first-line tool to monitor iron requirements in clin. practice.
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2001:523126 CAPLUS
DN 135:298543
TI A randomized, controlled parallel-group trial on efficacy and safety of **iron** sucrose (Venofer) vs. **iron gluconate** (Ferrlecit) in **hemodialysis** patients treated with rHuEpo
AU Kosch, Markus; Bahner, Udo; Bettger, Helga; Matzkies, Fritz; Teschner, Markus; Schaefer, Roland M.
CS Department of Internal Medicine D, University of Munster, Germany
SO Nephrology, Dialysis, Transplantation (2001), 16(6), 1239-1244
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB The objectives of the present trial were to compare the efficacy and safety of two i.v. iron prepns. with respect to Hb levels, iron status and recombinant human erythropoietin (rHuEpo) dosage requirements in stable, rHuEpo-treated **hemodialysis** patients (maintenance phase of iron treatment) over 6 mo. A total of 59 patients were randomized and assigned to one of two treatment groups and 55 patients were analyzed (**iron** sucrose n = 27; **iron gluconate** n = 28). Iron sucrose was administered in a dose of 250 mg iron dild. in 100 mL normal saline given over 60 min once per mo, while 62.5 mg **iron** as **iron gluconate** was given once per wk in a slow push injection (5 min). Efficacy parameters: Hb levels could be maintained from baseline to endpoint in both groups. There were, however, more patients in the iron sucrose group than in the **iron gluconate** group for whom treatment was discontinued because their Hb values exceeded 12.5 g/dL or ferritin values exceeded 1000 ng/mL (five vs. two and three vs. one patient, resp.). Transferrin satn. and serum ferritin increased significantly in both groups (+ 255.7 ng/mL with iron sucrose and + 278.5 ng/mL with **iron gluconate**), while rHuEpo dosage did not change significantly throughout the study. Safety parameters: There were a total of 174 infusions of iron sucrose and 720 injections of **iron gluconate** during the trial; all of them were well tolerated. In particular, we did not observe anaphylactoid reactions or any events suggestive of iron toxicity such as hypotension, dizziness, or nausea. High doses of iron sucrose (Venofer at a dose of 250 mg/mo) was equally effective in maintaining Hb and equally well tolerated as low doses of **iron gluconate** (Ferrlecit at a dose of 62.5 mg once per wk) in stable, rHuEpo treated **hemodialysis** patients.
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l5 5-55 bib ab

L5 ANSWER 5 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2001:523126 CAPLUS
DN 135:298543

TI A randomized, controlled parallel-group trial on efficacy and safety of **iron** sucrose (Venofer) vs. **iron gluconate** (Ferrlecit) in **hemodialysis** patients treated with rHuEpo

AU Kosch, Markus; Bahner, Udo; Bettger, Helga; Matzkies, Fritz; Teschner, Markus; Schaefer, Roland M.

CS Department of Internal Medicine D, University of Munster, Germany

SO Nephrology, Dialysis, Transplantation (2001), 16(6), 1239-1244
CODEN: NDTREA; ISSN: 0931-0509

PB Oxford University Press

DT Journal

LA English

AB The objectives of the present trial were to compare the efficacy and safety of two i.v. iron prepns. with respect to Hb levels, iron status and recombinant human erythropoietin (rHuEpo) dosage requirements in stable, rHuEpo-treated **hemodialysis** patients (maintenance phase of iron treatment) over 6 mo. A total of 59 patients were randomized and assigned to one of two treatment groups and 55 patients were analyzed (**iron** sucrose n = 27; **iron gluconate** n = 28). Iron sucrose was administered in a dose of 250 mg iron dild. in 100 mL normal saline given over 60 min once per mo, while 62.5 mg **iron** as **iron gluconate** was given once per wk in a slow push injection (5 min). Efficacy parameters: Hb levels could be maintained from baseline to endpoint in both groups. There were, however, more patients in the iron sucrose group than in the **iron gluconate** group for whom treatment was discontinued because their Hb values exceeded 12.5 g/dL or ferritin values exceeded 1000 ng/mL (five vs. two and three vs. one patient, resp.). Transferrin satn. and serum ferritin increased significantly in both groups (+ 255.7 ng/mL with iron sucrose and + 278.5 ng/mL with **iron gluconate**), while rHuEpo dosage did not change significantly throughout the study. Safety parameters: There were a total of 174 infusions of iron sucrose and 720 injections of **iron gluconate** during the trial; all of them were well tolerated. In particular, we did not observe anaphylactoid reactions or any events suggestive of iron toxicity such as hypotension, dizziness, or nausea. High doses of iron sucrose (Venofer at a dose of 250 mg/mo) was equally effective in maintaining Hb and equally well tolerated as low doses of **iron gluconate** (Ferrlecit at a dose of 62.5 mg once per wk) in stable, rHuEpo treated **hemodialysis** patients.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 55 CAPLUS COPYRIGHT 2002 ACS

AN 2001:396244 CAPLUS

DN 135:251207

TI Sodium **ferric gluconate** complex in the treatment of **iron** deficiency for patients on **dialysis**

AU Fishbane, Steven; Wagner, John

CS Department of Medicine, Winthrop-University Hospital, Mineola, NY, USA

SO American Journal of Kidney Diseases (2001), 37(5), 879-883
CODEN: AJKDDP; ISSN: 0272-6386

PB W. B. Saunders Co.

DT Journal; General Review

LA English

AB A review with 25 refs. I.v. iron has been found to be an important adjunctive therapy in the treatment of anemia for patients on **dialysis**. In the United States, iron dextran had been the only form available for parenteral use until 1999. This agent has been assocd. with a concerning no. of severe adverse reactions, in some cases resulting

in patients' deaths. Recently, a form of iron used for many years in Europe, sodium **ferric gluconate** complex in sucrose, was approved for i.v. use in the United States. Because this agent does not contain the immunogenic dextran component of iron dextran, it is expected that the safety profile of this drug should be superior to that of iron dextran. The purpose of this review is to critically appraise the relevant literature and to synthesize the information into a strategy for clin. use of this drug.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:867309 CAPLUS
DN 135:86274
TI Intravenous administration of iron in epoetin-treated **hemodialysis** patients-which drugs, which regimen?
AU Macdougall, Iain C.
CS Department of Renal Medicine, King's College Hospital, London, SE22 8PT, UK
SO Nephrology, Dialysis, Transplantation (2000), 15(11), 1743-1745
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal; General Review
LA English
AB A review with 30 refs. There has been a plethora of literature on iron management in erythropoietin (Epo)treated patients in recent times. Still no reliable lab. test for iron deficiency. The aim of this article is to discuss the different prepns. available and the various treatment regimens. There are at least four different i.v. iron prepns. available worldwide: **iron** dextran, **iron** sucrose, **iron gluconate**, and **iron** dextrin (polymaltose). All the i.v. iron prepns. have in common a central core contg. elemental iron, shielded by a carbohydrate shell. The choice of i.v. iron prepn. will be influenced by various factors. First, not all prepns. are available in every country (although availability is increasing all the time). Secondly, the patient population will det. which i.v. iron can be used: although it is practical to give haemodialysis patients a dose once-weekly, or even thrice-weekly during **dialysis**, such a regimen would be impossible in pre-**dialysis** or **peritoneal dialysis** patients. Thirdly, treatment regimens involving at least once-weekly dosing can utilize any i.v. iron prepn.; those involving once-monthly dosing are less suitable for **iron gluconate** due to the limitations on max. dose. I.v. iron supplementation has quite rightly grown in popularity in Epo-treated patients over the last decade. It is effective in correcting the commonest cause of a poor response to Epo, and its aggressive use can reduce Epo dose requirements. We need more information on whether frequent low-dose administration is preferable (or harmful), and what the optimum ferritin is in patients on Epo. In addn., there is a need to investigate the max. dose of iron that can be given safely as an i.v. bolus since, with the increasing use in pre-**dialysis** patients, prolonged infusions are costly and impractical. In the meantime, the most important message to get across in the light of the recent HCFA and ESAM data analyses the need for regular and frequent i.v. iron supplementation in patients receiving Epo; which drug and which treatment regimen are secondary considerations.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:838647 CAPLUS
DN 135:40659
TI Infusion of total dose iron versus oral iron supplementation in ambulatory **peritoneal dialysis** patients: A prospective, cross-over trial
AU Ahsan, Nasimul
CS Division of Nephrology, Department of Medicine, College of Medicine, Pennsylvania State University, Hershey, PA, USA
SO Advances in Peritoneal Dialysis (2000), 16, 80-84
CODEN: APDIFF; ISSN: 1197-8554
PB Peritoneal Dialysis Publications
DT Journal
LA English
AB The efficacy of intermittent, small doses of i.v. iron in **hemodialysis** patients is well established. But poor peripheral vascular access and frequency of therapy preclude acceptability of this method in **peritoneal dialysis** (PD) patients. Therefore, despite its marginal efficacy, oral iron remains the common method of iron supplementation in these patients. This prospective, cross-over trial compares infusion of total dose iron (ITDI) and oral iron supplementation in outpatient PD patients. Eleven stable **CAPD** patients with an hematocrit (Hct) of less than 33%, or a transferrin satn. (TSAT) of less than 30%, or both, were entered into the study. The study design included an oral phase [4 mo, **ferrous sulfate** 325 mg (195 mg elemental **iron**), three times daily], a "wash-out" phase (1 mo, no iron supplementation), and an ITDI phase [4 mo, single infusion over 4 h of 1 g iron dextran mixed in 1/2 normal saline]. Lab. parameters were monitored monthly, and s.c. recombinant human erythropoietin (rHuEPO) doses were adjusted monthly to maintain a hematocrit above 33%. Patients with hyperparathyroidism, aluminum toxicity, and weekly Kt/V below 1.8 were excluded. Nine patients [8 Caucasians, 1 African American; causes of end-stage renal disease (**ESRD**): hypertension (4 cases), diabetes (3 cases), glomerulonephritis (1 case), and polycystic kidney disease (1 case); mean age: 43.3.+-.2 yr; mean wt.: 73.0.+-.4 kg; duration of **ESRD**: 28.+-.13 mo] completed the 9-mo study. During the oral phase, TSAT rapidly decreased and a higher dose of rHuEPO failed to maintain Hct, a pattern sustained during the "wash-out" phase. During the ITDI phase, TSAT significantly increased and improvement in Hct resulted in a significant lowering of rHuEPO doses. The ITDI therapy was well tolerated. We conclude that ITDI is the preferred method of iron supplementation in outpatient PD patients.
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:460066 CAPLUS
DN 133:69350
TI Effects of erythropoietin therapy on iron absorption in chronic renal failure
AU Skikne, B. S.; Ahluwalia, N.; Fergusson, B.; Chonko, A.; Cook, J. D.
CS Department of Medicine, Divisions of Hematology and Nephrology, University of Kansas Medical Center, Kansas City, KS, 66160, USA
SO Journal of Laboratory and Clinical Medicine (2000), 135(6), 452-458
CODEN: JLCMAK; ISSN: 0022-2143
PB Mosby, Inc.
DT Journal
LA English

AB The effect of erythropoietin administration on the absorption of dietary and therapeutic iron was examd. in patients with anemia of chronic renal failure on maintenance **hemodialysis**. Absorption from test meals tagged extrinsically with iron 55, iron 59, or both was detd. 2 wk later by using incorporated red blood cell radioactivity and whole body counting. In an initial study of food iron absorption, the effect of initiating erythropoietin therapy was detd. by measuring the absorption of heme and nonheme iron before and 2 wk after the administration of 64 U/kg body wt. erythropoietin (range, 46-85 U/kg body wt.) three times weekly. Absorption of heme iron increased 1.6-fold from 18.6% to 30.1% ($P < .05$), and nonheme iron increased 3.7-fold from 1.3% to 4.9% ($P < .01$) after erythropoietin therapy. In a second study therapeutic iron absorption was evaluated at baseline and after erythropoietin administration (63 U/kg body wt. (range, 48-74 U/kg body wt.) three times weekly). The absorption of 50 mg of **iron** as **ferrous sulfate** increased 2.4-fold from 3.8% to 9.4% ($P < .05$) when given without food and 4.2-fold from 1.4% to 5.9% ($P < .05$) when given with food after erythropoietin administration. After adjusting for changes in iron stores with serum ferritin after erythropoietin therapy, the enhanced erythropoiesis assocd. with erythropoietin therapy increased absorption about 2-fold, which was similar to the response obsd. previously in normal subjects. In a final study we examd. the absorption of therapeutic iron during the steady-state phase of erythropoietin therapy after an erythroid response to erythropoietin had occurred. The absorption of 50 mg of iron was lower than that occurring with the initiation of erythropoietin therapy at 2.2% when given alone and 1.3% when taken with food. We conclude that iron absorption with or without erythropoietin stimulation is unimpaired in patients with chronic renal failure.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:451820 CAPLUS
DN 133:317038
TI Parenteral iron products for anemia in end-stage renal disease: comparative considerations
AU Bailie, George R.; Johnson, Curtis A.; Mason, Nancy A.
CS Albany College of Pharmacy, Albany, NY, 12208, USA
SO Formulary (2000), 35(6), 498-499, 503-508, 511-513
CODEN: FORMF9; ISSN: 1082-801X
PB Advanstar Communications, Inc.
DT Journal; General Review
LA English
AB This article reviews with 63 refs. available data on the currently marketed parenteral Fe prepns., Fe dextran and Fe gluconate, and a third prepn. under FDA review, Fe sucrose. I.v. Fe dextran can maintain and replete Fe stores in **hemodialysis** and **peritoneal dialysis** patients undergoing erythropoietin therapy, and optimal use of Fe dextran may result in better management of anemia. However, Fe dextran is assocd. with significant morbidity from dose-dependent and dose-independent adverse effects, including a low incidence of life-threatening or fatal anaphylactic reactions. I.v. Fe gluconate and Fe sucrose can also maintain body Fe stores and enhance erythropoietin-induced red blood cell prodn. Both are well tolerated and have little evidence of serious adverse reactions. Both products appear to be less toxic than Fe dextran. Several studies have suggested that parenteral Fe products may yield pos. pharmacoeconomic outcomes by reducing erythropoietin requirements. No studies have directly compared the safety, efficacy, or overall cost impact of Fe dextran, Fe gluconate,

and Fe sucrose.
RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:48827 CAPLUS
DN 132:92551
TI Parenteral iron use in the management of anemia in end-stage renal disease patients
AU Bailie, George R.; Johnson, Curtis A.; Mason, Nancy A.
CS Nephrology Pharmacy Associates, Inc, Ann Arbor, MI, USA
SO American Journal of Kidney Diseases (2000), 35(1), 1-12
CODEN: AJKDDP; ISSN: 0272-6386
PB W. B. Saunders Co.
DT Journal; General Review
LA English
AB A review with 53 refs. I.v. iron is required by most **dialysis** patients receiving erythropoietin (EPO) to maintain an adequate hematocrit. In the United States, there are currently two parenteral **iron** prepns., **iron** dextran and **iron gluconate**, approved for such use, and a third product, iron sucrose, is under development. This article reviews each of these products. Each of the iron products increases the efficacy of EPO use in anemia management. There is considerable experience in the United States and elsewhere with the use of iron dextran. Although it is clin. effective, iron dextran is also assocd. with significant morbidity from both dose-dependent and -independent side effects. The slow release of iron from this complex necessitates a delay in monitoring iron indexes after the administration of large doses of iron dextran. Recommended doses of iron sucrose appear very safe with little risk of anaphylactic reactions. Adverse effects are uncommon and not life threatening. If approved for use in the United States, iron sucrose may be a safe and effective alternative to iron dextran. **Iron** dissocs. from **iron gluconate** quite rapidly and may increase the prodn. of ionized free iron. **Iron gluconate** may be a safe alternative to iron dextran for patients with severe reactions, including anaphylaxis. The risk of allergic reactions to **iron gluconate** is very low. The exact place in therapy for the newer iron complexes remains unclear. Currently available data suggest that **iron** sucrose and **iron gluconate** may have diminished adverse effect profiles when compared with iron dextran. Addnl. clin. experience will establish the role for these new iron products.
RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 2000:29616 CAPLUS
DN 132:205741
TI Phosphate binders on iron basis: a new perspective?
AU Hergesell, Olaf; Ritz, Eberhard
CS Department of Internal Medicine, Ruperto Carola University, Heidelberg, Germany
SO Kidney International, Supplement (1999), 73(Renal Bone Disease), S42-S45
CODEN: KISUDF; ISSN: 0098-6577
PB Blackwell Science, Inc.
DT Journal; General Review
LA English
AB A review with 31 refs. Uremic patients on maintenance

hemodialysis are in pos. phosphate balance. This is mainly the result of the complex elimination kinetics of phosphate during **dialysis**. Removal of phosphate is less than net dietary intake. Classical phosphate binders such as calcium carbonate, calcium acetate, and aluminum-based compds. are limited by side effects (hypercalcemia) and outright toxicity (aluminum). There have been numerous recent attempts to develop alternative phosphate binders, e.g., polyallylamine-hydrochloride (Renagel), lanthanum carbonate, and trivalent iron-contg. compds. The latter is based on old observations that iron salts may cause hyperphosphatemia and rickets in exptl. animals and in patients. This idea has recently been taken up again, and effective inhibition of net intestinal phosphate uptake in non-uremic and uremic rats has been shown using simple **iron** salts (**citrate**, chloride, ammonium **citrate**) and complex compds. (cross-linked dextran and stabilized polynuclear iron hydroxide). In uremic rats, the latter compd. reduces urinary phosphate excretion as an indicator of reduced intestinal phosphate uptake and has also been shown to be effective in subjects with preterminal renal failure. So far, no side effects or short-term toxicity has been obsd. The compd. appears promising and deserves further evaluation.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 13 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1999:379954 CAPLUS
DN 131:138868
TI Comparison of methods used to measure serum **iron** in the presence of **iron gluconate** or **iron** dextran
AU Seligman, Paul A.; Schleicher, Rhoda B.
CS School of Medicine, Department of Medicine, Division of Hematology, University of Colorado Health Sciences Center, Denver, CO, 80220, USA
SO Clinical Chemistry (Washington, D. C.) (1999), 45(6, Pt. 1), 898-901
CODEN: CLCHAU; ISSN: 0009-9147
PB American Association for Clinical Chemistry
DT Journal
LA English
AB Concerns over iron toxicity relating to "oversatn." of transferrin have recently been applied to circumstances where iron is given i.v. as either **iron** dextran or **iron gluconate** to patients on **hemodialysis** receiving erythropoietin therapy. Because iron bound to **iron** dextran or **iron gluconate** does not cause acute **iron** toxicity the authors hypothesized that serum assays for iron measure the iron present in these complexes after i.v. infusion, which produces misleadingly high results for the oversatn. of transferrin. To address the oversatn. question, the authors measured serum iron in vitro in the presence of added **iron gluconate** as well as **iron** dextran. The data suggested that acidic buffers not only release iron from the transferrin-bound complex, but also release some **iron** still bound to the **gluconate** and dextran complexes.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 14 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1999:180506 CAPLUS
DN 130:261787
TI Sodium **ferric gluconate** complex in sucrose is safe and effective in **hemodialysis** patients: North American clinical trial

AU Nissenson, Allen R.; Lindsay, Robert M.; Swan, Suzanne; Seligman, Paul; Strobos, Jur
CS Los Angeles Medical Center, University of California, Los Angeles, CA, USA
SO American Journal of Kidney Diseases (1999), 33(3), 471-482
CODEN: AJKDDP; ISSN: 0272-6386
PB W. B. Saunders Co.
DT Journal
LA English
AB A new i.v. (IV) **iron** compd., sodium **ferric gluconate** complex in sucrose (Ferrlecit, R&D Labs., Inc, Marina Del Rey, CA), was administered over 8 consecutive **dialysis** days in equally divided doses to a total of either 0.5 or 1.0 g in a controlled, open, multicenter, randomized clin. study of anemic, iron-deficient **hemodialysis** patients receiving recombinant human erythropoietin (rHuEPO). Effectiveness was assessed by increase in Hb and hematocrit and changes of iron parameters. Results were compared with historically matched controls on oral iron. High-dose IV treatment with 1.0 g sodium **ferric gluconate** complex in sucrose resulted in significantly greater improvement in Hb, hematocrit, iron satn., and serum ferritin at all time points, as compared with low-dose IV (0.5 g) or oral iron treatment. Despite an initial improvement in mean serum ferritin and transferrin satn., 500 mg IV therapy did not result in a significant improvement in Hb at any time. Eighty-three of 88 patients completed treatment with sodium **ferric gluconate** complex in sucrose: 44 in the high-dose and 39 in the low-dose group. Two patients discontinued for personal reasons. The other three discontinued because of a rash, nausea and rash, and chest pain with pruritus, resp. In comparison with 25 matched control patients, adverse events could not be linked to drug therapy, nor was there a dose effect. In conclusion, sodium **ferric gluconate** complex in sucrose is safe and effective in the management of iron-deficiency anemia in severely iron-deficient and anemic **hemodialysis** patients receiving rHuEPO. This study confirms the concepts regarding iron therapy expressed in the National Kidney Foundation **Dialysis** Outcomes Quality Initiative (NKF-DOQI) that **hemodialysis** patients with serum ferritin below 100 ng/mL or transferrin saturations below 18% need supplementation with parenteral iron in excess of 1.0 g to achieve optimal response in Hb and hematocrit levels.
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 15 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1999:180505 CAPLUS
DN 131:27687
TI Sodium **ferric gluconate** complex in sucrose: safer intravenous **iron** therapy than iron dextrans
AU Faich, Gerald; Strobos, Jur
CS Pharmaceutical Safety Assessments, Inc., Narberth, PA, USA
SO American Journal of Kidney Diseases (1999), 33(3), 464-470
CODEN: AJKDDP; ISSN: 0272-6386
PB W. B. Saunders Co.
DT Journal
LA English
AB Use of recombinant human erythropoietin in patients with end-stage renal disease has highlighted iron deficiency as the major cause of resistant anemia. The current mainstay of i.v. (IV) iron replacement therapy, iron dextran, has been shown in prior studies to have a risk of serious life-threatening anaphylaxis of just under 1 per 100 patients exposed. The current study assessed the safety profile of an alternative IV

iron, sodium **ferric gluconate** complex in sucrose (Ferrlecit), as compared with iron dextrans. Sodium **ferric gluconate** complex in sucrose, a unique chem. prepn., has been in use since 1959, principally in Europe, at a rate of approx. 2.7 million IV doses per yr (1992 to 1996) in Germany and Italy alone. For iron dextran, usage in the United States was comparable-principally renal **hemodialysis**-and estd. from market sources at 3.0 million doses per yr (1995). From 1976 to 1996, there were 74 allergic adverse events reported for sodium **ferric gluconate** complex in sucrose to the World Health Organization (WHO), German Health Bureau, and the manufacturer (all combined). For the years 1992 to 1996, sodium **ferric gluconate** complex in sucrose had an allergy event reporting rate of 3.3 allergy episodes per million doses per yr compared with a similar rate of 8.7 reported allergy events per million doses per yr for iron dextran in the United States in 1995. Case fatalities for sodium **ferric gluconate** complex in sucrose and **iron** dextran within these reports were then compared. For sodium **ferric gluconate** complex in sucrose, there were no reports of deaths over the entire period (1976 to 1996). However, for iron dextrans, there were 31 fatalities among 196 allergy/anaphylaxis cases reported in the United States between 1976 and 1996, yielding a case-fatality rate of 15.8%. These data show that sodium **ferric gluconate** complex in sucrose, when compared with iron dextrans in comparably sized patient usage populations with similar total rates of reporting of allergic events, has a significantly lower reported mortality rate ($P < 0.001$). Thus, the data justify usage of sodium **ferric gluconate** complex in sucrose as the safer iron replacement therapeutic agent.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 16 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1999:180489 CAPLUS
DN 130:266664
TI Strategies for iron supplementation: oral versus intravenous
AU Macdougall, Iain C.
CS Department of Renal Medicine, King's College Hospital, London, UK
SO Kidney International, Supplement (1999), 69(Erythropoietin and Iron), S61-S66
CODEN: KISUDF; ISSN: 0098-6577
PB Blackwell Science, Inc.
DT Journal
LA English
AB Iron supplementation has become an integral part of the management of patients receiving epoetin therapy, and clinicians have found it necessary to learn how and when to use it to the best advantage. Three routes of administration for iron are available: oral, i.m., and i.v. Oral iron has the advantage of being simple and cheap, but it is limited by side-effects, poor compliance, poor absorption, and low efficacy. I.v. iron is the best means of guaranteeing delivery of readily available iron to the bone marrow, but it requires greater clin. supervision. The i.v. iron prepns. vary widely in their degrdn. kinetics, bioavailability, side-effect profiles, and max. dose for single administration. Iron dextran is hampered by a small but significant risk of anaphylaxis, whereas all i.v. iron prepns. can induce "free iron" reactions if the circulating plasma transferrin is overloaded. I.v. iron may be given in advance of epoetin therapy, as concomitant treatment to prevent the development of iron deficiency, as treatment of abs. or functional iron deficiency, or as adjuvant therapy to enhance the response to epoetin in

iron-replete patients. Markers of iron status that may indicate a need for i.v. iron include a serum ferritin of less than 100 .mu.g/L, a transferrin satn. of less than 20%, and a percentage of hypochromic red cells more than 10%. Various regimens are available for giving i.v. iron: low-dose administration of 20 to 60 mg every **dialysis** session in **hemodialysis** patients, medium-dose administration of 100 to 400 mg, and high-dose administration of 500 to 1000 mg. **Iron** sodium **gluconate** can only be given as a low-dose regimen because of toxicity, whereas the only prepn. suitable for high-dose administration is iron dextran. Although concerns have been raised regarding iron overload and long-term toxicity with i.v. iron therapy in terms of increased risk of infections, cardiovascular disease, and malignancy, there is little evidence to substantiate this in patients receiving epoetin. Care should be taken, however, to prevent the serum ferritin rising above 800 to 1000 .mu.g/L and the transferrin satn. above 50%. Provided this is done, the benefits of i.v. iron almost certainly outweigh the risks in terms of optimizing the response to epoetin therapy.

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 17 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1998:728417 CAPLUS
DN 130:29265
TI Metal complex-impregnated polymers as artificial **dialysis** membranes
IN Inada, Yuji
PA Toin Gakuen, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10298531	A2	19981110	JP 1997-118636	19970423

AB Insol. supports and metals are chem. bound to obtain a metal complex-introduced support, which removes active oxygen species. An aminated cellulose acetate membrane was suspended in an aq. soln. of 0.1 M HEPES and DTPA was added. MnCl2.cntdot.4H2O was added to the above reaction mixt. to impregnate the complex into the membrane to be used for **hemodialysis**.

L5 ANSWER 18 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1998:726525 CAPLUS
DN 130:105634
TI Novel hematological parameters in patients receiving recombinant human erythropoietin and undergoing **hemodialysis**
AU Bhandari, S.; Norfolk, D. R.; Brownjohn, A. M.; Turney, J. H.
CS Department of Renal Physiology, University of Leeds, Leeds, LS2 9NQ, UK
SO Hematology (Amsterdam) (1998), 3(1), 67-75
CODEN: HMATFL; ISSN: 1024-5332
PB Harwood Academic Publishers
DT Journal
LA English
AB Recombinant Human Erythropoietin (EPO) replacement therapy effectively treats the chronic anemic assocd. with end stage renal disease. However due to an increase in demand, a functional iron deficiency state may arise which is characterized by an inability to supply iron and subsequent EPO resistance. Indicators of iron status are potentially misleading in this

situation. Red cell ferritin (RCFer) and reticulocyte indexes may be more reliable measures of functional iron deficiency. We investigated, prospectively, the value of RCFer and reticulocyte indexes to detect functional iron deficiency in 11 patients, 10 male and 1 female, mean age 51 yr (ranges 20-74) commencing s.c. EPO therapy. All patients had received oral **ferrous sulfate** 600 mg, total dose, daily for 6 wk prior to starting EPO. Study subjects had a mean aluminum of 1.1 mmol/L (28.9 .mu.g/L) and parathyroid hormone (PTH) 109 pg/L. Serum folate, vitamin B12 deficiencies and bleeding diathesis were excluded. **Dialysis** adequacy was maintained with a mean Kt/V (a measure of the amt. of plasma cleared of urea divided by the urea distribution vol. V) of 1.0 and urea redn. ratio of 64%. Hb rose from a mean value of 8.0-9.9 g/dL ($p<0.01$). There was an assocd. significant fall in both serum ferritin (SF) (205.5-62.88 .mu.g/l, $p<0.01$) and RCFer (19.96-10.8 ag/red cell, $p<0.001$). After 96 days of EPO therapy, 18% of patients had a demonstrably reduced RCFer (<7 ag/red cell) while none had a reduced SF (<15 .mu.g/L) and 75% had a transferrin satn. (TS) <20%. Mean SF levels remained consistently above 50 .mu.g/L. There was no significant change in TS verifying its poor sensitivity as a marker of functional iron deficiency. Mean Hb content of reticulocytes (CHr) and mean Hb concn. of reticulocytes (CHCMr) fell ($p<0.001$, $p<0.01$ resp.) to levels suggesting iron deficiency at 3 mo. These results suggest that RCFer and CHr may help detect the onset of functional iron deficiency in patients commencing EPO therapy despite oral iron. EPO therapy leads to a significant depletion of both erythroid and storage iron.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 19 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1998:426004 CAPLUS
DN 129:160988
TI Experience of iron saccharate supplementation in **hemodialysis** patients treated with erythropoietin
AU Hussain, R.; Chishti, S. H.; Naqvi, Saj
CS The Kidney Centre, Karachi, Pak.
SO Nephrology (1998), 4(1/2), 105-108
CODEN: NEPHF2; ISSN: 1320-5358
PB Blackwell Science Pty Ltd.
DT Journal
LA English
AB We assessed the efficacy of i.v. iron saccharate (VENOFER) vs. oral iron supplementation in **hemodialysis** patients treated with low-dose erythropoietin (EPO). Twenty **hemodialysis** patients with serum ferritin >200 ng/mL and transferrin satn. >30% were assigned to one of the two groups. In Group 1, 10 were given i.v. iron saccharate (100 mg i.v. twice weekly) post **dialysis**. In Group 2, oral **ferrous sulfate** 200 mg was given thrice daily. In both groups, s.c. EPO 25 units/kg body wt. (BW) was started simultaneously, twice weekly. After 3 mo (study completion) the mean Hb and hematocrit was significantly increased in Group 1 than in Group 2 (Hb 11.60.+-.0.64 G/dL vs. 10.5 G/dL.+-.1.14 $P<0.01$). The final mean EPO dose was 25% lower in Group 1 than in Group 2 (3400.+-.1356 U/wk vs. 4600.+-.1356 U/wk $P=0.10$) and the mean serum ferritin was higher in the i.v. iron group than the oral group (671 ng/mL.+-.388 vs. 367 ng/mL.+-.238 P=NS). The same was also obsd. with transferrin satn. (44.6%.+-.19.8 in Group 1 vs. 29%.+-.11.0 in Group 2 P=NS). No adverse effects were seen during the study. In conclusion, we obsd. that regular use of i.v. iron had a significantly enhanced Hb response, better maintained serum ferritin and lower EPO dosage requirement than the oral iron group.

L5 ANSWER 20 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1998:424653 CAPLUS
DN 129:62695
TI Correction of uremic iron deficiency anemia in hemodialyzed patients. A prospective study
AU Fudin, Roberto; Jaichenko, Jose; Shostak, Avshalom; Bennett, Michael; Gotloib, Lazaro
CS Dep. Nephrology Hypertension, Ha'Emek Medical Center, Afula, 18101, Israel
SO Nephron (1998), 79(3), 299-305
CODEN: NPRNAY; ISSN: 0028-2766
PB S. Karger AG
DT Journal
LA English
AB The correction of anemia and Fe status was evaluated in Fe deficient uremic patients starting **hemodialysis**. Patients had either no Fe supplementation (control), oral Fe, or i.v. (i.v.) Fe gluconate. Follow-up periods were 12 mo for the control and 26 mo for patients treated orally or i.v. At 0 time, all patients were anemic (Hb .ltoreq.78 g/L) and showed signs of severe Fe deficiency. Hb levels of i.v. treated patients were increased .ltoreq.126 g/L after 26 mo.

L5 ANSWER 21 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1998:124056 CAPLUS
DN 128:140123
TI Iron complex delivery to a patient by transfer from dialyzate
IN Ash, Stephen R.
PA Hemocleanse, Inc., USA; Ash, Stephen R.
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9806482	A1	19980219	WO 1997-US14232	19970813
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5906978	A	19990525	US 1997-869331	19970605
	AU 9739787	A1	19980306	AU 1997-39787	19970813
	EP 944429	A1	19990929	EP 1997-937224	19970813
	R: DE, ES, FR, GB, IT, NL, PT				
PRAI	US 1996-23926P	P	19960814		
	US 1997-869331	A	19970605		
	WO 1997-US14232	W	19970813		

AB Iron complexes with org. anions, esp. **ferrous gluconate**, are used for delivering **iron** to iron-deficient patients, e.g., with end stage renal disease, by i.p. **dialysis** or **hemodialysis**. The iron complex comprises divalent or trivalent iron ions which are complexed with .gtoreq.1 low mol. wt. anions, where the complex has mol. wt. <50,000 (esp. <12,000), is nonpolymeric, water-sol., chem. stable and well absorbed into the blood and body. The dialyzate compn. comprises sodium 130-150, magnesium 0.4-1.5, calcium 2-4,

potassium 1-3, chloride 90-120, acetate 3-5, bicarbonate 30-40 mEq/L, and iron 1-250 .mu.g/dL as iron complex. The compn. further comprises dextrose, sorbents and surfactants. In an example, the dialyzate was created from 20 L of purified deionized water with a com. available acetate conc. in a 1:34 diln. with water and 10 mg/L **ferrous gluconate** (1 mg/dL contg. 125 .mu.g/dL iron).

L5 ANSWER 22 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1997:701018 CAPLUS
DN 127:341302
TI Safety aspects of parenteral iron in patients with end-stage renal disease
AU Sunder-Plassmann, Gere; Horl, Walter H.
CS Department of Medicine, Division of Nephrology, University of Vienna, Vienna, Austria
SO Drug Safety (1997), 17(4), 241-250
CODEN: DRSAEA; ISSN: 0114-5916
PB Adis
DT Journal; General Review
LA English
AB A review with 75 refs. Abs. and functional iron deficiency is the most common cause of epoetin (recombinant human erythropoietin) hyporesponsiveness in renal failure patients. Diagnostic procedures for detg. iron deficiency include measurement of serum iron levels, serum ferritin levels, satn. of transferrin and percentage of hypochromic red blood cells. Patients with iron deficiency should receive supplemental iron, either orally or i.v. Adequate i.v. iron supplementation allows redn. of epoetin dosage by approx. 40%. I.v. iron supplementation is recommended for all patients undergoing **hemodialysis** and for pre-**dialysis** and **peritoneal dialysis** patients with severe iron deficiency. During the maintenance phase (period of epoetin therapy after correction of iron deficiency), the use of low-dose i.v. iron supplementation (10 or 20mg per **hemodialysis** treatment or 100mg every second week) avoids iron overtreatment and minimizes potential adverse effects. Depending on the degree of pre-existing iron deficiency, markedly higher iron doses are necessary during the correction phase (period of epoetin therapy after correction of iron deficiency) [e.g. i.v. iron 40 to 100mg per **hemodialysis** session up to a total dose of 1000mg]. The iron status should be monitored monthly during the correction phase and every 3 mo during the maintenance phase to avoid overtreatment with i.v. iron.

L5 ANSWER 23 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1997:677965 CAPLUS
DN 127:326986
TI Markers of masked iron deficiency and effectiveness of EPO therapy in chronic renal failure
AU Ahluwalia, Naman; Skikne, Barry S.; Savin, Virginia; Chonko, Arnold
CS Divisions of Hematology and Nephrology, Department of Medicine, University of Kansas Medical Center, Kansas City, KS, 66160-7402, USA
SO American Journal of Kidney Diseases (1997), 30(4), 532-541
CODEN: AJKDDP; ISSN: 0272-6386
PB Saunders
DT Journal
LA English
AB Recombinant erythropoietin (rHuEPO) is well established in the management of anemia of chronic renal disease. However, a no. of clin. issues, including the best lab. indicators of an imminent marrow response to rHuEPO replacement, the ideal measurements to detect masked iron deficiency, and optimal methods of iron replacement, remain unanswered.

To investigate these issues, studies were performed in anemic chronic **hemodialysis** patients. A no. of std. hematol. measurements in addn. to automated reticulocyte counts (Sysmex R-1000) and serum transferrin receptors (TfR) were obtained in these patients. A response to initiation of rHuEPO administration could be predicted if the serum TfR concn. was less than 6 mg/L (normal, 3.8 to 8.5 mg/L). In patients on rHuEPO, an imminent Hb response to an increased rHuEPO dose could be predicted after 1 wk based on a greater than 20% increase from baseline in the serum TfR or abs. reticulocyte count, with a sensitivity of 92%. In patients on rHuEPO replacement with serum ferritin levels greater than 30 .mu.g/L, none of the panel of tests, including serum TfR, reliably detected masked iron deficiency. In a longterm study over 5 mo in patients on a stable maintenance dose of EPO, a gradual decline in total body iron occurred, even in subjects with initial adequate iron stores, and despite taking 50 mg elemental **iron** daily as oral **ferrous sulfate**. The serum TfR is useful for predicting a Hb response when initiating rHuEPO therapy, and combined with automated reticulocyte counting it is valuable for predicting a Hb response when increasing the dose of rHuEPO. The serum TfR loses its specificity for detecting tissue iron deficiency in patients on maintenance rHuEPO therapy because of increased erythropoiesis, which itself raises serum TfR levels.

L5 ANSWER 24 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1997:231114 CAPLUS
DN 126:211467
TI Combination of erythropoietin and iron(III) complex for treatment of **hemodialysis** patients
IN Lehmann, Paul
PA Boehringer Mannheim Gmbh, Germany
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19535571	A1	19970320	DE 1995-19535571	19950914
	CA 2231192	AA	19970320	CA 1996-2231192	19960912
	WO 9709996	A1	19970320	WO 1996-EP3997	19960912
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
	AU 9671282	A1	19970401	AU 1996-71282	19960912
	AU 724623	B2	20000928		
	EP 851762	A1	19980708	EP 1996-932503	19960912
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, LT, LV, FI				
	CN 1202113	A	19981216	CN 1996-198284	19960912
	BR 9609971	A	19990914	BR 1996-9971	19960912
	JP 11512414	T2	19991026	JP 1996-511661	19960912
	RU 2173168	C2	20010910	RU 1998-106841	19960912
	WO 9841226	A1	19980924	WO 1997-EP1343	19970318
	W: AU, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IL, JP, KR, KZ, LT, LV, MD, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

AU	9721572	A1	19981012	AU 1997-21572	19970318
AU	726801	B2	20001123		
EP	977582	A1	20000209	EP 1997-914258	19970318

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

CN	1248920	A	20000329	CN 1997-182049	19970318
BR	9714632	A	20000523	BR 1997-14632	19970318
JP	2000514092	T2	20001024	JP 1998-540046	19970318
NO	9801136	A	19980313	NO 1998-1136	19980313
US	6333306	B1	20011225	US 1998-29859	19980316
NO	9904511	A	19990917	NO 1999-4511	19990917
US	2002094948	A1	20020718	US 2001-47749	20011023
US	2002049161	A1	20020425	US 2001-984268	20011029
PRAI DE	1995-19535571	A	19950914		
WO	1996-EP3997	W	19960912		
WO	1997-EP1343	A	19970318		
US	1998-29859	A3	19980316		
US	1999-381248	A3	19990914		

AB The high Fe requirement of **hemodialysis** patients is provided by i.v. coadministration, in the same prepn. or sep. prepns., of recombinant human erythropoietin (3000-7000 IU) and a Fe3+ complex [e.g. Fe gluconate or Fe(OH)3 saccharate at 5-20 mg]. Use of this low concn. of Fe3+ complex avoids Fe toxicity and acute-phase reactions.

L5 ANSWER 25 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1996:638349 CAPLUS
DN 125:265976
TI Safety of intravenous injection of iron saccharate in **hemodialysis** patients
AU Sunder-Plassmann, G.; Horl, W. H.
CS Department Medicine, University Vienna, Vienna, A-1090, Austria
SO Nephrology, Dialysis, Transplantation (1996), 11(9), 1797-1802
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB The most frequent i.v. iron prepns. used for **hemodialysis** patients are **iron** dextran, **iron gluconate** and **iron** saccharate. Possible side effects include anaphylactic reactions due to preformed anti-bodies to dextran or vascular reactions due to unbound **iron** during treatment with **iron gluconate** or **iron** saccharate. Four dosage regimens of i.v. iron saccharate therapy were studied: 10, 20, 40 and 100 mg, which were given over a time period of 1 min after the end of the **dialysis** session. Iron metab. parameters (serum iron concn., transferrin satn. and serum ferritin levels) were measured at 0, 1, 5, 15 and 30 min after application and immediately prior to the next **dialysis** session. All 18 regular **hemodialysis** patients studied received recombinant human erythropoietin (rHuEpo). Serum iron levels and transferrin satn. increased significantly following i.v. injection of all doses of iron saccharate. Iron "oversatn." of transferrin iron binding did not occur in patients with transferrin levels > 180 mg/dL. However, in patients with transferrin levels < 180 mg/dL the injection of 100 mg iron saccharate resulted in a transferrin satn. of 102.6 .+-. 39.5% (two patients with transferrin levels of 87 and 92 mg/dL had transferrin saturations of 119.8 and 149.7%, two patients with transferrin levels of 148 and 171 mg/dL had transferrin saturations of 77.9 and 63.1%, resp.). Serum ferritin levels remained unchanged during

the post-injection period and increased by the next **dialysis** session following injection of 100 mg iron saccharate by 165%. It is concluded that i.v. iron saccharate injection (10-100 mg even within 1 min) does not result in "oversatn." of transferrin iron binding if serum transferrin levels are > 180 mg/dL (high-risk patients: transferrin < 100 mg/dL). This may explain, at least in part, the minimal side effects obsd. during the i.v. application of iron saccharate. Low-dose i.v. iron saccharate (10-40 mg) is recommended for iron supplementation of **hemodialysis** patients. If injection of 100 mg is necessary, serum transferrin level should exceed 180 mg/dL. There is, however, no need for fast i.v. injection during routine iron supplementation.

L5 ANSWER 26 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1996:453480 CAPLUS
DN 125:132226
TI Regular low-dose intravenous iron therapy improves response to erythropoietin in **hemodialysis** patients
AU Taylor, J. E.; Peat, N.; Porter, C.; Morgan, A. G.
CS Renal Unit, Nottingham City Hospital, Nottingham, UK
SO Nephrology, Dialysis, Transplantation (1996), 11(6), 1079-1083
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB Erythropoietin (Epo) is an effective but expensive treatment for anemia in patients with chronic renal failure. Hyporesponsiveness to Epo, particularly in **hemodialysis** patients, is most commonly due to a functional iron deficiency, which is difficult to monitor reliably. Forty-six stable **hemodialysis** patients, receiving Epo therapy, were commenced on regular low-dose i.v. **iron** (sodium **ferric gluconate** complex) at a dose of 62.5 mg/5 mL given as a slow injection post-**dialysis** twice weekly, weekly, or fortnightly, according to their serum ferritin levels. Hb, serum ferritin, Epo dose, and iron dose were measured at 6-weekly intervals over a 6-mo period. At the beginning of the study, 12 patients in the group had ferritin levels of less than 100 .mu.g/l, and were thus considered to potentially have an abs. iron deficiency. The study group was therefore split into two subgroups for the purpose of anal., i.e. the 12 patients with ferritin levels of less than 100 .mu.g/l at the start of the study or "low ferritin group", and the remaining 34 patients with ferritin levels of greater than 100 .mu.g/l at the start of the study or "normal ferritin group". In the low ferritin group, i.v. iron therapy increased serum ferritin levels, and produced a significant rise in Hb, and a significant redn. in Epo dose. Ferritin pre-iron, median (range) 68 (20-96) .mu.g/l; post-iron, 210.5 (91-447) .mu.g/l, Wilcoxon. Hb pre-iron, 10.05 (8.2-11.9) g/dL; post-iron, 11.0 (9.9-11.9) g/dL,. Epo dose pre-iron, 9000 (4000-30 000)-i.u./wk; post-iron, 6000 (2000-10 000) i.u./wk,. Similar results were obtained in the normal ferritin group following i.v. iron therapy, with significant increases in serum ferritin levels and Hb concns., and a significant redn. in Epo dose. Ferritin pre-iron, 176 (103-519) .mu.g/l; post-iron, 304.5 (121-792) .mu.g/l,. Hb pre-iron, 9.85 (6.5-12.8) g/dL; post-iron: 11.25 (9.9-13.3) g/dL,. Epo dose pre-iron, 6000 (2000-15 000) i.u./wk; post-iron, 4000 (0-15 000)-i.u/wk,. Regular i.v. iron supplementation in **hemodialysis** patients improves the response to Epo therapy.

L5 ANSWER 27 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1996:453174 CAPLUS
DN 125:132212

TI "Oversaturation" of transferrin after intravenous **ferric gluconate** (Ferrlecit) in **hemodialysis** patients
AU Zanen, A. L.; Adriaansen, H. J.; Van Bommel, E. F. H.; Posthuma, R.; De Jong, G. M. Th.
CS Department Internal Medicine, Drechtsteden Hospital, Dordrecht, 3045 PM, Neth.
SO Nephrology, Dialysis, Transplantation (1996), 11(5), 820-824
CODEN: NDTREA; ISSN: 0931-0509
PB Oxford University Press
DT Journal
LA English
AB Chronic **hemodialysis** causes blood loss and iron-deficiency. This can be cor. with i.v. prepns., e.g. sodium **ferric-gluconate** (FeGl). In two patients complaints of hypotension and malaise during FeGl infusion coincided with high levels of serum iron and a calcd. transferrin iron satn. above 100%. Iron toxicity could be the cause of these complaints. Free iron is known to aggravate the toxicity of free radicals and other reactive oxygen products that are constantly formed in the body. The authors compared four rates of FeGl infusion with regard to iron parameters. 20 **Dialysis** patients received a total of 36 infusions of FeGl. A rapid infusion of 125 mg (Protocol A) or 62.5 mg (Protocol B) of FeGl was given during the last 30 min of **dialysis**. A slow infusion of 125 mg (Protocol C) or 62.5 mg (Protocol D) was given during 4 or 4.5 h of **dialysis**. Blood was taken at regular intervals before, during, and after **dialysis** for detn. of serum iron, transferrin, ferritin, hematocrit, total protein, albumin, and lactate dehydrogenase (LDH). Transferrin satn. was calcd. from transferrin and serum iron. With rapid infusion A (125 mg) the highest levels of serum iron (median 120 (range 40-159) micromol/l) and transferrin satn. (207 (84-331)%) were seen at the end of the infusion. These were significantly higher than the peak levels with B, C, and D. With rapid infusion B (62.5 mg), peak levels were intermediately high (serum iron 61 (50-96) .mu.mol/l; transferrin satn. 118 (91-174)%). With slow infusion C (125 mg) similar peak levels were seen (serum iron 83 (43-106) .mu.mol/l; transferrin satn. 141 (88-172)%). With slow infusion D (62.5 mg), the lowest peak levels were seen (serum iron 38 (31-55) .mu.mol/l; transferrin satn. 78 (43-92)%). These levels were significantly lower than those with A, B and C. Only with D all patients showed a transferrin satn. lower than 100%. Ferritin was increased before the next **dialysis** in all patients. LDH was not significantly elevated during any infusion. The commonly used rapid infusion rate (A) of FeGl causes "oversatn." of transferrin. This is compatible with iron toxicity due to free iron which may explain the authors' patients' complaints. Free iron cannot be measured directly. LDH as a crude measure of cell damage was not elevated. Better measurements to prove free iron toxicity, like lipid peroxides, are not yet readily available. Infusion during a longer period at a lower dose (D) is effective and eliminates "oversatn." of transferrin and probably the danger of iron toxicity.

L5 ANSWER 28 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1995:828125 CAPLUS
DN 123:253374
TI Effect of iron as a new type of phosphate binder in **hemodialysis** patients
AU Kuroda, Shigeomi; Komori, Masaki; Nagamatsu D. Sc., Kazuyuki; Ninomiya, Rumiko; Maejima, Kiyoshi; Hasegawa, Keika; Samejima, Masatsugu; Kuroda, Mari; Fujimori, Hiroyuki; et al.
CS Dep. Clinical Res., Okura Hosp., Tokyo, Japan

SO Jpn. J. Nephrol. (1995), 37(8), 468-73
CODEN: NJGKAU; ISSN: 0385-2385
DT Journal
LA English
AB Hyperphosphatemia is one of the major problems requiring management in the majority of **hemodialysis** patients and they require phosphate-binding agents to control the hyperphosphatemia. Aluminum hydroxide and calcium compds. are used currently as phosphate-binding agents to treat hyperphosphatemia, but these compds. can cause undesirable side effects. Therefore, the development of new phosphate-binding agents is imperative. It is well known that oral and i.v. administration of iron causes hypophosphatemia. We hypothesized that this side effect of iron may be beneficial for the treatment of hyperphosphatemia in **hemodialysis** patients. Consequently, we conducted a fundamental and clin. investigation of the effects of iron administration. Membrane permeability of phosphorus in a mixt. of sodium **ferrous citrate** and dessicated aluminum hydroxide in the presence of hydrogenated lecithin as a phosporic compd. was examd. Fifteen patients undergoing **hemodialysis** were treated with 150 mg of sodium **ferrous citrate** given orally for eight weeks. The permeability of the filtering membrane to phosphorus decreased in accordance with the dosage of sodium **ferrous citrate** and dessicated aluminum hydroxide. The degree of phosphate-binding effect of sodium **ferrous citrate** was larger than that of dessicated aluminum hydroxide. Serum phosphorus decreased significantly during the expt. These results suggest that the oral administration of sodium **ferrous citrate** as a new phosphate binder is a useful therapeutic method for **hemodialysis** in patients with hyperphosphatemia.

L5 ANSWER 29 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1994:517658 CAPLUS
DN 121:117658
TI The development of oral sorbent for uremic toxins for patients with kidney failure
AU Jing, Shi-Bing; Yamaguchi, Tatsuaki
CS Dep. Ind. Chem., Chiba Inst Tech, Chiba, Japan
SO Kenkyu Hokoku - Chiba Kogyo Daigaku, Riko-hen (1994), 41, 63-8
CODEN: RPCTAL; ISSN: 0385-7026
DT Journal
LA Japanese
AB **Hemodialysis** is effective therapy for uremia, but requires much dialyzate and expensive machines. An oral sorbent can react with uremic toxins which are produced and accumulated in the intestines of chronic uremia patients, and are subsequently discharged in the faces from the body, in this way they are removed from the blood. To prevent undesirable binding with protein nutrients, dialdehyde cellulose (DAC) was modified by chitosan coating. The resulting 15% chitosan-coated DAC (chitosan DAC), greatly decreased albumin binding, and maintained high urea and ammonium binding capacity. Chronic renal failure rats administered chitosan DAC (5%) showed significant decrease in blood urea nitrogen compared to those that received a normal diet. Iron chitosan complex prepd. by chitosan and **iron**(II) **sulfate** was assessed for its effectiveness as a chem. oral sorbent of phosphate. The results obtained demonstrated its usefulness for this purpose in treating hyperphosphatemia.

L5 ANSWER 30 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1993:425707 CAPLUS
DN 119:25707

[redacted] [redacted]

TI Mucormycosis during deferoxamine therapy is a siderophore-mediated infection: in vitro and in vivo animal studies
AU Boelaert, Johan R.; de Locht, Marielle; Van Cutsem, Jan; Kerrels, Veronique; Cantinieaux, Brigitte; Verdonck, Ann; Van Landuyt, Herman W.; Schneider, Yves Jacques
CS Unit Renal Infect. Dis., Algemeen Ziekenhuis St-Jan, Brugge, B-8000, Belg.
SO J. Clin. Invest. (1993), 91(5), 1979-86
CODEN: JCINAO; ISSN: 0021-9738
DT Journal
LA English
AB This study investigated the pathophysiol. of mucormycosis caused by Rhizopus in 46 **dialysis** patients treated with deferoxamine (DFO). DFO aggravated mucormycosis exptl. induced in guinea pigs, leading to a shortened animal survival. The DFO effect on Rhizopus was not mediated by polymorphonuclear cells. Fe-DFO, the iron chelate of DFO, abolished the fungistatic effect of blood serum on Rhizopus and increased the in vitro growth of the fungus. This effect was present at Fe-DFO concns. .gtoreq.0.01 .mu.M, at which the fungal uptake of radioiron from 55Fe-DFO was obsd. A 1000-fold higher concn. of **iron citrate** was required to achieve a similar rate of radioiron uptake and of in vitro growth stimulation as obsd. with Fe-DFO. The in vitro effects of 1 .mu.M Fe-DFO in serum on radioiron uptake and on growth stimulation were more striking for Rhizopus than for Aspergillus fumigatus and were practically absent for Candida albicans. For these 3 fungal species, the rates of radioiron uptake from 55Fe-DFO and of growth stimulation in the presence of Fe-DFO in serum were directly correlated. The results underscore the major role of Fe-DFO in the pathogenesis of DFO-related mucormycosis. Pharmacokinetic changes in humans with uremia lead to a prolonged accumulation of Fe-DFO after DFO administration, which may explain the increased sensitivity of **dialysis** patients to DFO-related mucormycosis.

L5 ANSWER 31 OF 55 CAPLUS COPYRIGHT 2002 ACS
AN 1982:460733 CAPLUS
DN 97:60733
TI Reduction of residual aluminum in drinking water. Replacement of aluminum **sulfate** by **ferric** chlorosulfate
AU De Paepe, A.; Montiel, A.; Leroy, P.; Welte, B.
CS Serv. Controle Eaux Ville, Paris, 75014, Fr.
SO J. Fr. Hydrol. (1981), 12(3), 285-319
CODEN: JFHYD8; ISSN: 0335-9581
DT Journal
LA French
AB The Al content of drinking water suitable for renal **hemodialysis** is maintained .ltoreq.30 .mu.g/L by using FeClSO4 in the coagulation phase of water purifn.

L5 ANSWER 32 OF 55 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-011329 [01] WPIDS
DNC C2001-083139
TI Treating anemia or **hemodialysis** patients with combination preparation containing erythropoeitin and iron preparations, at specific doses giving optimum erythropoiesis without side-effects.
DC B04 P42
IN LEHMANN, P; LELHANN, P
PA (HOFF) ROCHE DIAGNOSTICS GMBH; (BOEF) BOEHRINGER MANNHEIM GMBH
CYC 49
PI NO 9904511 A 19990917 (200001)*
AU 9721572 A 19981012 (200001)

[redacted] [redacted]

EP 977582 A1 20000209 (200012) DE
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT RO SE SI
CN 1248920 A 20000329 (200033)
BR 9714632 A 20000523 (200035)
JP 2000514092 W 20001024 (200058) 26p
AU 726801 B 20001123 (200101)#
CZ 9903300 A3 20010314 (200117)
HU 2000001409 A2 20010328 (200124)
WO 9841226 A1 19980924 (200129)B DE 28p
RW: AT BE CH DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AU BG BR BY CA CN CZ EE FI GE HU IL JP KR KZ LT LV MD MK MX NO NZ PL RO RU SG SI SK TR UA US
MX 9908451 A1 20000601 (200133)
KR 2000076259 A 20001226 (200134)
NZ 337465 A 20020426 (200236)

ADT NO 9904511 A WO 1997-EP1343 19970318, NO 1999-4511 19990917; AU 9721572 A AU 1997-21572 19970318, WO 1997-EP1343 19970318; EP 977582 A1 EP 1997-914258 19970318, WO 1997-EP1343 19970318; CN 1248920 A CN 1997-182049 19970318, WO 1997-EP1343 19970318; BR 9714632 A BR 1997-14632 19970318, WO 1997-EP1343 19970318; JP 2000514092 W WO 1997-EP1343 19970318, JP 1998-540046 19970318; AU 726801 B AU 1997-21572 19970318; CZ 9903300 A3 WO 1997-EP1343 19970318, CZ 1999-3300 19970318; HU 2000001409 A2 WO 1997-EP1343 19970318, HU 2000-1409 19970318; WO 9841226 A1 WO 1997-EP1343 19970318; MX 9908451 A1 MX 1999-8451 19990914; KR 2000076259 A WO 1997-EP1343 19970318, KR 1999-708355 19990914; NZ 337465 A NZ 1997-337465 19970318, WO 1997-EP1343 19970318

FDT AU 9721572 A Based on WO 9841226; EP 977582 A1 Based on WO 9841226; BR 9714632 A Based on WO 9841226; JP 2000514092 W Based on WO 9841226; AU 726801 B Previous Publ. AU 9721572, Based on WO 9841226; CZ 9903300 A3 Based on WO 9841226; HU 2000001409 A2 Based on WO 9841226; KR 2000076259 A Based on WO 9841226; NZ 337465 A Based on WO 9841226

PRAI NO 1999-4511 19990917

AB WO 9841226 A UPAB: 20010528 ABEQ treated as Basic

NOVELTY - The use of erythropoeitin (EPO) preparations (A) (containing less than 2000 U EPO) and iron preparations (B) (with 1-30 mg of an equivalent amount of iron ions) is claimed for producing a combination preparation (I) for use in the correction and maintenance phases of the treatment of anemia or **hemodialysis** patients.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a pharmaceutical packing unit comprising less than 2000 U of an EPO preparation in single administrative forms and 1-30 mg of an equivalent amount of iron ions of an iron preparation as uniform administration form in one container or as a separate administration form in separate containers.

ACTIVITY - Antianemic. No supporting data given.

MECHANISM OF ACTION - Stimulator of red blood cell formation.

USE - (I) optimizes erythropoiesis, and is used for stimulating erythropoeisis in the treatment of anemia or **hemodialysis** patients. Typically the patients are treated with weekly doses of 5-30 mg of iron (III) complex and 7000-10000 U of EPO (administered on the same day) and the iron status of the patients is measured; if the ferritin value is in the normal range of below 500 micro g/l then the patient is optimally controlled.

ADVANTAGE - The doses of (A) and (B) are balanced to provide optimum erythropoeisis without the risk of side-effects and toxicity (such as iron poisoning). In particular acute phase reactions are avoided in the case of intravenous iron therapy. The optimal doses of (A) and (B) for a particular individual can be easily assessed by determining the soluble transferrin receptor level.

[redacted] [redacted]

Dwg.0/0

AB NO 9904511 A UPAB: 20010611
NOVELTY - The use of erythropoeitin (EPO) preparations (A) (containing less than 2000 U EPO) and iron preparations (B) (with 1-30 mg of an equivalent amount of iron ions) is claimed for producing a combination preparation (I) for use in the correction and maintenance phases of the treatment of anemia or **hemodialysis** patients.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a pharmaceutical packing unit comprising less than 2000 U of an EPO preparation in single administrative forms and 1-30 mg of an equivalent amount of iron ions of an iron preparation as uniform administration form in one container or as a separate administration form in separate containers.

ACTIVITY - Antianemic. No supporting data given.

MECHANISM OF ACTION - Stimulator of red blood cell formation.

USE - (I) optimizes erythropoiesis, and is used for stimulating erythropoeisis in the treatment of anemia or **hemodialysis** patients. Typically the patients are treated with weekly doses of 5-30 mg of iron (III) complex and 7000-10000 U of EPO (administered on the same day) and the iron status of the patients is measured; if the ferritin value is in the normal range of below 500 micro g/l then the patient is optimally controlled.

ADVANTAGE - The doses of (A) and (B) are balanced to provide optimum erythropoeisis without the risk of side-effects and toxicity (such as iron poisoning). In particular acute phase reactions are avoided in the case of intravenous iron therapy. The optimal doses of (A) and (B) for a particular individual can be easily assessed by determining the soluble transferrin receptor level.

Dwg.0/0

L5 ANSWER 33 OF 55 MEDLINE
AN 2002394518 IN-PROCESS
DN 22139397 PubMed ID: 12143432
TI Implementing continuous quality improvement strategies for improving iron replacement in **hemodialysis** patients.
AU Trenkle J A
CS Nephrology Hospital Services and Satellite Services, Dialysis Center at Bethpage, Bethpage, NY, USA.
SO NEPHROLOGY NURSING JOURNAL, (2001 Oct) 28 (5) 561-5.
Journal code: 100909377. ISSN: 1526-744X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Nursing Journals
ED Entered STN: 20020730
Last Updated on STN: 20020730
AB Anemia associated with end stage renal disease can diminish quality of life substantially. Maintaining a stable hematocrit and stable hemoglobin levels affords many advantages. Improvement of anemia management is possible with the implementation of continuous quality improvement (CQI). Our review of the literature motivated us to switch from iron dextran injection, which can induce anaphylactic reactions and has other associated problems, to sodium **ferric gluconate** complex injection. This enables us to safely provide iron supplementation without the precautions that were in place for iron dextran. Our methods for creating and implementing CQI in the **dialysis** program at our university hospital are described.

L5 ANSWER 34 OF 55 MEDLINE

AN 2002393031 IN-PROCESS
DN 22136555 PubMed ID: 12141472
TI Lack of reaction to **ferric gluconate** in **hemodialysis** patients with a history of severe reaction to iron dextran.
AU Bastani Bahar; Rahman Saad; Gellens Mary
CS Department of Internal Medicine, Saint Louis University School of Medicine, Missouri 63110, USA.
SO ASAIO JOURNAL, (2002 Jul-Aug) 48 (4) 404-6.
Journal code: 9204109. ISSN: 1058-2916.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20020727
Last Updated on STN: 20020727
AB Iron deficiency is the most common cause of a poor response to recombinant human erythropoietin (rHuEPO) in patients receiving long-term **dialysis**, who are known to absorb oral iron preparations poorly. This retrospective case series reports our preliminary observation of five patients receiving long-term **dialysis** in a tertiary care university hospital who had responded poorly to rHuEPO because of iron deficiency. These patients also had a history of severe, potentially life-threatening reaction to intravenous iron dextran preparation, but they tolerated the newly available **ferric gluconate** complex in sucrose with no untoward effects. These results suggest that the parenteral administration of **ferric gluconate** can be safe for those who require iron therapy and who have had a severe reaction to iron dextran.

L5 ANSWER 35 OF 55 MEDLINE
AN 2002255834 MEDLINE
DN 21916181 PubMed ID: 11919405
TI Continuous intravenous sodium **ferric gluconate** improves efficacy in the maintenance phase of EPOrHu administration in **hemodialysis** patients.
AU Bolanos Luis; Castro Pedro; Falcon Teresa G; Mouzo Ricardo; Varela Jose Manuel
CS Hemodialysis Unit, Hospital General Juan Cardona, Ferrol, Spain.. lbolanosc@senefro.org
SO AMERICAN JOURNAL OF NEPHROLOGY, (2002 Jan-Feb) 22 (1) 67-72.
Journal code: 8109361. ISSN: 0250-8095.
CY Switzerland
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 200206
ED Entered STN: 20020509
Last Updated on STN: 20020611
Entered Medline: 20020606
AB Although intravenous iron has proved to optimize the efficacy of EPOrHu in **hemodialysis** patients, hitherto no consensus exists with respect to the best regimen of intravenous iron administration. We started a prospective randomized study in 26 patients undergoing chronic **hemodialysis** who had adequate iron metabolism indices (serum ferritin >100 microg/l; %TSAT >20%; %HypoE <10% and CHr >26 pg) and were in the maintenance phase of EPOrHu administration (target hemoglobin

obtained >10 g/dl). All patients were receiving sodium **ferric gluconate** (Ferrlecit) intermittently prior to the study and after a 1-month wash-out period where iron was not administered patients were randomized to receive the same previous dose of intravenous iron either in a continuous (6.25-21.3 mg in every **hemodialysis** session) or an intermittent regimen (62.5 mg every 1-4 weeks, not modifying the previous schedule of administration). At 16 weeks, the continuous group showed a significant increment in serum Hb (11.83 +/- 1.12 g/dl) with respect to baseline (10.96 +/- 1.31 g/dl) ($p < 0.05$), whereas no differences were obtained in intermittent group (baseline: 11.16 +/- 1.03 g/dl; 16 weeks: 11.14 +/- 0.90 g/dl, NS). In contrast with the intermittent group, serum ferritin increased significantly in the continuous group (16 weeks: 508 +/- 157 microg/l; baseline: 368 +/- 56 microg/l; $p < 0.05$), whereas %TSAT and CHr did not modified during the study in both groups. %HypoE increased significantly with respect to baseline values in the continuous group ($p < 0.05$) and close to significantly different in the intermittent group ($p = 0.06$). Our study suggests that **hemodialysis** patients in the maintenance phase of EPOrHu administration would obtain further benefit in terms of serum hemoglobin level with a continuous intravenous serum **ferric gluconate** regimen, at least in the short term.
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L5 ANSWER 36 OF 55 MEDLINE
AN 2002073577 MEDLINE
DN 21658801 PubMed ID: 11799582
TI Anemia of chronic renal failure: new treatment alternative.
AU Seiler S
CS Adam Linton Dialysis Unit, London Health Sciences Centre, London, Ontario.
SO CANNT J, (2000 Jul-Sep) 10 (3) 35-9, 43-8; quiz 40-2, 49-51. Ref: 28
Journal code: 100959352.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English; French
FS Nursing Journals
EM 200202
ED Entered STN: 20020125
Last Updated on STN: 20020220
Entered Medline: 20020219
AB Iron deficiency anemia can develop relatively early in the course of chronic renal failure (CRF). The clinical practice guidelines for the treatment of anemia in chronic renal failure established in the U.S., the National Kidney Foundation-**Dialysis** Outcomes Quality Initiative (NKF-DOQI), and in Canada, by the Canadian Society of Nephrology, recommend the use of intravenous iron therapy for iron supplementation in **hemodialysis** patients, most patients on **peritoneal dialysis** and some pre-**dialysis** patients. In an open-label, randomized, multicentre North American trial, an alternate form of intravenous **iron**, sodium **ferric gluconate**, was shown to be safe and effective in the management of iron-deficiency anemia in **hemodialysis** patients receiving erythropoietin. The study confirmed the concepts regarding iron therapy expressed in the U.S. NKF-DOQI Clinical Practice Guidelines that **hemodialysis** patients with serum ferritin below 100 ng/ml or transferrin saturation below 20% need supplementation with parenteral iron in excess of 1000 mg to achieve optimal response in hemoglobin/hematocrit (Hgb/Hct) levels.

L5 ANSWER 37 OF 55 MEDLINE
AN 2001152742 MEDLINE
DN 21024949 PubMed ID: 11149105
TI Sodium **ferric gluconate** therapy in renal transplant and renal failure patients.
AU Yorgin P D; Belson A; Sarwal M; Alexander S R
CS Department of Pediatrics, Section of Pediatric Nephrology, Stanford University, Lucille Salter Packard Children's Hospital, 703 Welch Road, Suite H5, Stanford, CA 94305, USA.. pyorgin@stanford.edu
SO PEDIATRIC NEPHROLOGY, (2000 Dec) 15 (3-4) 171-5.
Journal code: 8708728. ISSN: 0931-041X.
CY Germany: Germany, Federal Republic of
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200103
ED Entered STN: 20010404
Last Updated on STN: 20010404
Entered Medline: 20010322
AB Intravenous infusion of sodium **ferric gluconate** (Ferrlecit) has been reported to be effective and safe in pediatric and adult **hemodialysis** patients with iron depletion. We sought to expand on the previous studies by treating 13 consecutive pediatric renal failure and renal transplant patients with sodium **ferric gluconate** doses that were higher than previously reported. Efficacy was defined as: (1) an increase in hematocrit of > or = 3 vol% with no change or a decrease in erythropoietin dose or (2) a stable hematocrit with a decrease of > or = 25% in the erythropoietin, 2 weeks to 2 months after sodium **ferric gluconate** infusion. Two dosing strategies were employed: (1) high dose, where single dose sodium **ferric gluconate** (mg) approximately calculated **iron** deficit, and (2) sodium **ferric gluconate**, 62.5 mg/dose for children < 40 kg, 125 mg/dose for children > 40 kg, infused on eight consecutive **hemodialysis** runs. There was only one self-limited adverse reaction in 60 doses. Three patients with previous adverse reactions to **iron** dextran tolerated sodium **ferric gluconate** without adverse effect. Sodium **ferric gluconate** was efficacious in eight out of ten patients that received a cumulative dose > 5 mg/kg. The mean hematocrit increased 30.3 +/- 7.8 to 36.4 +/- 4.4 vol% (P = 0.04) and the mean erythropoietin dose decreased 251.5 +/- 149.1 to 100.7 +/- 113.0 units/kg/week (P = 0.02). Although sodium **ferric gluconate** appears to be effective and safe at the doses used, multicenter, prospective pharmacokinetic and clinical trials of sodium **ferric gluconate** should be conducted in children.

L5 ANSWER 38 OF 55 MEDLINE
AN 2000334093 MEDLINE
DN 20334093 PubMed ID: 10873876
TI Antiplatelet therapy alters iron requirements in **hemodialysis** patients.
AU Goicoechea M; Caramelo C; Ochando A; Andrea C; Garvia R; Ortiz A
CS Fundacion Renal Inigo Alvarez de Toledo, Madrid, Spain.
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (2000 Jul) 36 (1) 80-7.
Journal code: 8110075. ISSN: 1523-6838.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 200007
ED Entered STN: 20000810
Last Updated on STN: 20010521
Entered Medline: 20000726

AB **Hemodialysis** (HD) patients are prone to develop iron deficiency because of consumption of iron stores during erythropoietin (EPO) therapy. Data are needed to establish the factors involved in the different iron needs among these patients. Sixty-five HD patients were prospectively studied during a year. The subjects were **dialyzed** through polytetrafluoroethylene (PTFE) grafts (n = 23), arteriovenous native fistulae (n = 41), and a Permcath (n = 1). Twenty-four patients were administered aspirin; 23 patients, ticlopidine; 1 patient, dipyridamole; and 4 patients, anticoagulation with acenocoumarol. Iron supplementation (oral or parenteral) and laboratory parameters were recorded monthly. Significant differences in iron requirements, depending on the use of antiplatelet and/or anticoagulation agents, were found. Total parenteral iron supplements were greater in patients on antiplatelet therapy with either native or graft vascular accesses compared with the rest (2,406 +/- 1,445 versus 1,562 +/- 858 mg; P = 0.0081). Twelve of 52 patients on antiplatelet therapy required oral iron and only 1 of 13 patients not on antiplatelet therapy was administered oral iron supplements (P < 0.05). Patients on antiplatelet therapy were administered more transfusions (1.9 +/- 3.8 transfusions/y) than individuals not on antiplatelet therapy (0.15 +/- 0.3 transfusions/y; P = 0.0015). However, only patients with PTFE grafts on antiplatelet therapy had a post-HD bleeding time longer than patients not on antiplatelet therapy (9.1 +/- 3.6 versus 5.7 +/- 3.9 minutes; P < 0.0001). Multiple logistic regression analysis showed that the use of antiplatelet agents (P < 0.05) is an independent factor that increased the probability of requiring greater parenteral iron supplements (>2.5 g/y). Patients with PTFE grafts required more EPO than those with autologous fistulae (160 +/- 93 versus 100 +/- 63 U/kg/wk; P = 0.012). No differences between groups were found that could explain this finding. Antiplatelet and/or anticoagulation therapy implied the use of greater amounts of iron supplements in HD patients. Although these greater requirements of iron occurred in parallel with bleeding from the vascular access, additional data favor the existence of other factors, eg, interdialytic blood losses. The present study suggests that antiplatelet therapy may be an important factor in determining iron requirements in HD patients. Moreover, our data relate for the first time the use of prosthetic grafts with increased EPO requirements, an issue of great potential importance in the debate about vascular access policy in **dialysis** units.

L5 ANSWER 39 OF 55 MEDLINE
AN 1998001849 MEDLINE
DN 98001849 PubMed ID: 9342497
TI Sodium **ferric gluconate** and **iron** requirements in **hemodialysis** patients.
CM Comment on: Clin Nephrol. 1997 Mar;47(3):141-57
AU Navarro J F; Teruel J L
SO CLINICAL NEPHROLOGY, (1997 Sep) 48 (3) 202.
Journal code: 0364441. ISSN: 0301-0430.
CY GERMANY: Germany, Federal Republic of
DT Commentary
Letter
LA English
FS Priority Journals
EM 199711

[redacted] [redacted]

ED Entered STN: 19980109
Last Updated on STN: 19990129
Entered Medline: 19971128

L5 ANSWER 40 OF 55 MEDLINE
AN 97390952 MEDLINE
DN 97390952 PubMed ID: 9247787
TI Maintenance therapy with intravenous iron in **hemodialysis** patients receiving erythropoietin.
AU Kotaki M; Uday K; Henriquez M; Blum S; Dave M
SO CLINICAL NEPHROLOGY, (1997 Jul) 48 (1) 63-4.
Journal code: 0364441. ISSN: 0301-0430.
CY GERMANY: Germany, Federal Republic of
DT (CLINICAL TRIAL)
Letter
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199709
ED Entered STN: 19970926
Last Updated on STN: 19970926
Entered Medline: 19970915

L5 ANSWER 41 OF 55 MEDLINE
AN 96328510 MEDLINE
DN 96328510 PubMed ID: 8739277
TI Effectiveness of intravenous administration of Fe-gluconate-Na complex to maintain adequate body iron stores in **hemodialysis** patients.
AU Navarro J F; Teruel J L; Liano F; Marcen R; Ortuno J
CS Department of Nephrology, Hospital Ramon y Cajal, Madrid, Spain.
SO AMERICAN JOURNAL OF NEPHROLOGY, (1996) 16 (4) 268-72.
Journal code: 8109361. ISSN: 0250-8095.
CY Switzerland
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199610
ED Entered STN: 19961022
Last Updated on STN: 19970203
Entered Medline: 19961009
AB The evolution of body iron stores was prospectively analyzed during a stable erythropoiesis period in 27 subjects (14 males and 13 females) on **hemodialysis** for more than 2 years in order to clarify the iron requirements of these patients and the effectiveness and safety of the administration of sodium **ferric gluconate** as a method to maintain adequate body iron stores. All patients had a stable hemoglobin level (variation < 1 g/dl). Sixteen subjects were on maintenance recombinant human erythropoietin therapy at regular doses. All patients received intravenous sodium **ferric gluconate** for 6 months (62.5 mg/month). The iron requirements were estimated as the difference between the amount of iron administered and the variation of body iron stores (calculated by the empirical formula of Cook and coworkers). The hemoglobin remained stable (basal 10.7 +/- 1.1, at 6th month 10.6 +/- 1 g/dl). Considering all cases, there were no significant variations in body iron stores (basal 457 +/- 273, at 6th month 451 +/- 316 mg). The patients were classified into three groups according to whether their body iron stores decreased (group A, n = 8), remained stable (group B, n = 11), or increased (group C, n = 8). There were no

differences among groups concerning sex, age, time on **hemodialysis**, or erythropoietin therapy. However, there were statistically significant differences concerning their basal body iron stores (group A 457 +/- 228 mg. group B 563 +/- 146, and group C 230 +/- 297 mg; $p < 0.05$, analysis of variance). The iron needs, considering the total group, were 2.12 +/- 2 mg/day. There were no differences in iron requirements according to sex, but menstruating women had higher iron needs than the nonmenstruating ones (4.29 +/- 2 vs. 2.08 +/- 1.45 mg/day; $p < 0.01$). The iron requirements in patients on erythropoietin therapy were higher than in those without (2.63 +/- 1.59 vs. 1.88 +/- 1.68 mg/day; $p < 0.05$). However, excluding the menstruating women, the iron need in patients on erythropoietin were similar to those in subjects without this treatment (2.16 +/- 1.13 vs. 1.88 +/- 1.68 mg/day). All patients showed good compliance with an excellent tolerance. We have observed that in subjects on maintenance erythropoietin therapy, the iron requirements are stable. The administration of sodium **ferric gluconate** is safe and efficient in maintaining adequate body iron stores.

L5 ANSWER 42 OF 55 MEDLINE
AN 96223538 MEDLINE
DN 96223538 PubMed ID: 8659499
TI Intravenous iron supplementation for the treatment of the anemia of moderate to severe chronic renal failure patients not receiving **dialysis**.
AU Silverberg D S; Iaina A; Peer G; Kaplan E; Levi B A; Frank N; Steinbruch S; Blum M
CS Department of Nephrology, Ichilov Hospital, Tel Aviv, Israel.
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1996 Feb) 27 (2) 234-8.
Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199608
ED Entered STN: 19960808
Last Updated on STN: 19970203
Entered Medline: 19960801
AB Iron deficiency may develop in **hemodialysis** patients, especially when erythropoietin is given. The role of iron deficiency in the anemia of predialysis chronic renal failure (CRF), however, is much less clear. We have intravenously (IV) administered iron as ferric saccharate in a total dose of 200 mg elemental iron monthly for 5 months to 33 CRF patients who remained anemic despite oral iron supplementation and who had no laboratory signs of iron overload. None was receiving erythropoietin therapy. In 22 of the patients there was an increase in the hematocrit values by the end of the study. These patients were considered responders to intravenous iron (IV Fe) therapy. In 11 patients the iron administration was not associated with improvement of the anemia (nonresponders). Before onset of the IV Fe therapy there were no differences between the responders and nonresponders with regard to degree of anemia, serum ferritin, iron saturation, renal function, or blood pressure. One additional patient was excluded from the study because of a mild reaction during an IV test dose before the study. No worsening of kidney function and no other side effects were noted. In four patients (three responders and one nonresponder) the control of blood pressure necessitated antihypertensive drug therapy adjustment. In conclusion, IV Fe supplementation in two thirds of anemic CRF patients not receiving **dialysis** resulted in a significant improvement of the anemia, thus avoiding the necessity of erythropoietin or blood administration. This

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could be achieved by increasing the plasma ferritin levels to 200 to 400 microns/L and/or increasing the iron saturation to 25% to 35%. Intravenous ferric saccharate appears to be a safe and effective method of administering iron for the correction of anemia in CRF patients not receiving **dialysis**.

L5 ANSWER 43 OF 55 MEDLINE
AN 95289405 MEDLINE
DN 95289405 PubMed ID: 7771487
TI The efficacy of erythropoietin in human immunodeficiency virus-infected end-stage renal disease patients treated by maintenance **hemodialysis**.
AU Shrivastava D; Rao T K; Sinert R; Khurana E; Lundin A P; Friedman E A
CS Department of Medicine, Kings County Hospital, Brooklyn, NY, USA.
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1995 Jun) 25 (6) 904-9.
Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; AIDS
EM 199507
ED Entered STN: 19950713
Last Updated on STN: 19970203
Entered Medline: 19950706
AB The superimposition of human immunodeficiency virus (HIV) infection, associated opportunistic infections, and anti-retroviral therapy further worsens the severity of anemia in patients also suffering from end-stage renal disease. A major cause of anemia in renal failure is a deficiency of erythropoietin. The causes of anemia in HIV disease include direct and indirect stem cell inhibition by the virus, increased peripheral destruction of red blood cells, and bone marrow suppression by various opportunistic infections and therapeutic drugs, particularly zidovudine. We compared the efficacy of recombinant human erythropoietin (rHuEPO) therapy in improving the anemia in HIV-infected end-stage renal disease patients (group I) with that in nondiabetic (group II) and diabetic (group III) **hemodialysis** patients without HIV infection. All three groups of patients were comparable in **dialysis** prescription and serum iron studies. Iron supplementation was prescribed to all patients, and none received blood transfusions. After 8 weeks of rHuEPO therapy (administered intravenously in a dose of 100 U/kg body weight thrice weekly), the mean increase in hematocrit was similar in all responders (5.8% increase in hematocrit in 23 of 30 HIV patients and 6.7% increase in 24 of 30 non-HIV patients). Response in hematocrit was noted in HIV patients despite the presence of opportunistic infections in 15 and zidovudine administration in 11. Seven HIV-positive patients and six non-HIV patients failed to respond to rHuEPO. Irrespective of the HIV status, the baseline serum EPO levels in patients responding to rHuEPO were significantly lower than those in nonresponders.(ABSTRACT TRUNCATED AT 250 WORDS)

L5 ANSWER 44 OF 55 MEDLINE
AN 95048855 MEDLINE
DN 95048855 PubMed ID: 7960194
TI Intra-dialytic oral iron therapy.
CM Comment in: Int J Artif Organs. 1994 Dec;17(12):670
AU Dunea G; Swagel M A; Bodiwala U; Arruda J A
CS Cook Country Hospital, Hektoen Institute for Medical Research, WSKC Dialysis-Services, Chicago, IL.
SO INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS, (1994 May) 17 (5) 261-4.

[redacted] [redacted]

Journal code: 7802649. ISSN: 0391-3988.
CY Italy
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199412
ED Entered STN: 19950110
Last Updated on STN: 19960129
Entered Medline: 19941206
AB In order to test the limits of what can be achieved with oral iron therapy and eliminate the factor of noncompliance, we conducted a series of observational studies in an 140-patient inner city **dialysis** unit. In these studies the patients received supervised **iron** therapy as 3-4 **ferrous sulfate** (325 mg) tablets during each **dialysis**. Acceptance and tolerance was high, less than 10% refusing to take the tablets. In two separate observational studies oral intradialytic iron yielded a hematocrit 28% in 69% of patients and 30% in 42-52%. There was no correlation between the final hematocrit and serum ferritin or transferrin saturation. The response to iron therapy could frequently not be predicted by the ferritin levels or transferrin saturation. We conclude that in view of the known hazards of intravenous iron dextran, oral intradialytic therapy should be tried first and that a good response can be expected in one half to two thirds of **hemodialysis** patients.

L5 ANSWER 45 OF 55 MEDLINE
AN 92387804 MEDLINE
DN 92387804 PubMed ID: 1516988
TI Blood pressure after three different forms of correction of anemia in **hemodialysis**.
AU Pascual J; Teruel J L; Marcen R; Liano F; Ortuno J
CS Department of Nephrology, Ramon y Cajal Hospital, Madrid, Spain.
SO INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS, (1992 Jul) 15 (7) 393-6.
Journal code: 7802649. ISSN: 0391-3988.
CY Italy
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199210
ED Entered STN: 19921023
Last Updated on STN: 19921023
Entered Medline: 19921006
AB It is not known whether recombinant human erythropoietin has a direct, clinically apparent pressor effect in **hemodialysis** patients or whether hypertension developing or aggravated in these patients merely reflects increased hematocrit. We compared blood pressure after three different methods of partial correction of anemia in **hemodialysis** patients with similar baseline hematocrits (erythropoietin n = 12, intravenous iron alone n = 10, androgens n = 9). Shortly after the start of treatment and with a minimally increased hematocrit, the need for antihypertensive medication increased in the erythropoietin group. No such pressor effect was observed with iron or androgens. These data suggest a direct hypertensive effect of erythropoietin in some patients on **hemodialysis**.

L5 ANSWER 46 OF 55 MEDLINE
AN 92206454 MEDLINE
DN 92206454 PubMed ID: 1553973

[redacted] [redacted]

TI Septicemia due to Yersinia enterocolitica in a hemodialyzed, iron-depleted patient receiving omeprazole and oral iron supplementation.
AU Fakir M; Saison C; Wong T; Matta B; Hardin J M
CS Service d'Hemodialyse, Epuration extra-renale-Medecine interne, Centre Hospitalier de Soissons, Reims, France.
SO AMERICAN JOURNAL OF KIDNEY DISEASES, (1992 Mar) 19 (3) 282-4.
Journal code: 8110075. ISSN: 0272-6386.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199204
ED Entered STN: 19920509
Last Updated on STN: 19920509
Entered Medline: 19920424
AB Septicemia occurred in a long-term **hemodialysis** patient on oral iron supplementation who had been treated for esophageal ulcer by omeprazole, an ulcer-healing drug. Yersinia enterocolitica serotype 0:3 was recovered from blood cultures. A raised intraintestinal pH and an increased intraluminal iron load may have been contributing factors for the enhanced proliferation and generalized infection of Y enterocolitica.

L5 ANSWER 47 OF 55 MEDLINE
AN 92149670 MEDLINE
DN 92149670 PubMed ID: 1738405
TI Intravenous Fe-**gluconate**-Na for **iron**-deficient patients on **hemodialysis**.
AU Pascual J; Teruel J L; Liano F; Sureda A; Ortuno J
SO NEPHRON, (1992) 60 (1) 121.
Journal code: 0331777. ISSN: 0028-2766.
CY Switzerland
DT Letter
LA English
FS Priority Journals
EM 199203
ED Entered STN: 19920405
Last Updated on STN: 19970203
Entered Medline: 19920318

L5 ANSWER 48 OF 55 MEDLINE
AN 92088607 MEDLINE
DN 92088607 PubMed ID: 1751102
TI Is hematologic response to iron and erythropoietin in **hemodialysis** patients affected by other factors?.
AU Acchiardo S R; Moore L W; Sargent J A; Burk L B
CS Department of Medicine, University of Tennessee-Memphis.
SO ASAIO TRANSACTIONS, (1991 Jul-Sep) 37 (3) M183-5.
Journal code: 8611947. ISSN: 0889-7190.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199201
ED Entered STN: 19920216
Last Updated on STN: 19970203
Entered Medline: 19920129
AB Multiple factors have been implicated in the hematologic response to erythropoietin (EPO). The authors studied 54 **hemodialysis** patients; 44 received 1.5 g of iron intravenously, 16 received oral iron

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for 12 weeks, and 24 were treated with EPO. Some patients received these treatments in sequence. The factors evaluated were serum albumin, protein catabolic rate, serologic evidence of hepatitis B or C, parathormone (PTH), and aluminum levels. Red cell production was expressed as milliliters of red blood cell increase per day per kilogram of body weight. For patients receiving EPO, hematologic response was normalized to 50 U/kg/**dialysis**. Of the patients on oral iron, 31% had a good response (hematocrit greater than or equal to 30%). Of the patients who received iron intravenously, 50% had a good response (hematocrit greater than or equal to 30%). All patients treated with EPO responded well, except for one patient who did not respond to doses of EPO up to 200 U/kg/**dialysis**. The response to intravenous iron dextran was more rapid than the response to oral iron or EPO. Nutritional factors (serum albumin and protein catabolic rate), serologic evidence of hepatitis, elevated PTH levels, or elevated aluminum levels did not significantly affect the response to iron supplementation or EPO treatment.

L5 ANSWER 49 OF 55 MEDLINE
AN 91211754 MEDLINE
DN 91211754 PubMed ID: 1902285
TI Iron deficiency in maintenance **hemodialysis** patients: assessment of diagnosis criteria and of three different iron treatments.
AU Allegra V; Mengozzi G; Vasile A
CS Servizio Emodialisi, USL N.8 Bassa Fruilana, Ospedale di Palmanova, Regione Friuli-Venezia Giulia, Italia.
SO NEPHRON, (1991) 57 (2) 175-82.
Journal code: 0331777. ISSN: 0028-2766.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199105
ED Entered STN: 19910616
Last Updated on STN: 19970203
Entered Medline: 19910530
AB The study was carried out in order to evaluate in maintenance **hemodialysis** (MH) patients: (1) the reliability of serum ferritin (SF) measurement in iron deficiency diagnosis and therapy; (2) the possibility to improve iron stores assessment through laboratory indexes routinely used in clinical practice; (3) the most effective iron deficiency treatment. After a preliminary assessment of SF reference values in 250 healthy volunteers, we studied 72 MH patients divided into three groups according to their SF baseline values: high (group A), normal (group B), low (group C) (normal range 19-191 ng/ml). Each group was further divided into three subgroups receiving three different iron treatments for 6 months: (1) oral administration of 67.5 mg/day of Fe3+ as Fe-ferritin (subgroups A1, B1, C1); (2) oral administration of 60 mg/day of Fe3+ as Fe-chondroitin sulfate (subgroups A2, B2, C2); (3) i.v. administration at the end of each dialytic session of 31 mg of Fe3+ as Fe-gluconate-Na (subgroups A3, B3, C3). The response to the iron therapy was considered positive when the hemoglobin (Hb) and the hematocrit (Ht) increased to greater than or equal to 15% of the baseline values. The rate of positive responses in each subgroup was as follows: A1 0/5, A2 0/5, A3 0/7, B1 2/10, B2 1/6, B3 5/11, C1 1/7, C2 3/7, C3 10/16. We concluded that SF values above 191 ng/ml allow to exclude iron deficiency whereas SF values less than or equal to the normal range are inadequate. In an attempt to improve diagnostic sensitivity we divided patients of subgroup B3 and C3 into responders (R) and nonresponders (NR).(ABSTRACT TRUNCATED AT 250 WORDS)

L5 ANSWER 50 OF 55 MEDLINE
AN 91208763 MEDLINE
DN 91208763 PubMed ID: 2019020
TI Sodium **ferric gluconate** complex given intravenously for **iron** deficiency in **hemodialysis**.
AU Pascual J; Teruel J L; Liano F; Sureda A; Ortuno J
SO CLINICAL NEPHROLOGY, (1991 Feb) 35 (2) 87.
Journal code: 0364441. ISSN: 0301-0430.
CY GERMANY: Germany, Federal Republic of
DT Letter
LA English
FS Priority Journals
EM 199105
ED Entered STN: 19910616
Last Updated on STN: 19910616
Entered Medline: 19910524

L5 ANSWER 51 OF 55 MEDLINE
AN 86075437 MEDLINE
DN 86075437 PubMed ID: 3940504
TI Zinc tolerance test in uremia. Effect of **ferrous sulfate** and aluminum hydroxide.
AU Abu-Hamdan D K; Mahajan S K; Migdal S D; Prasad A S; McDonald F D
SO ANNALS OF INTERNAL MEDICINE, (1986 Jan) 104 (1) 50-2.
Journal code: 0372351. ISSN: 0003-4819.
CY United States
DT (CLINICAL TRIAL)
(CONTROLLED CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198601
ED Entered STN: 19900321
Last Updated on STN: 19970203
Entered Medline: 19860121
AB The effects of **ferrous sulfate** and aluminum hydroxide on the oral zinc tolerance test after administration of 25 mg of elemental zinc as sulfate were studied in six **hemodialysis** patients and six normal controls. Fasting plasma zinc levels, the 2-hour plasma zinc peak, and the area under the plasma zinc curve were significantly lower in patients compared with values in controls (plasma zinc, 92 +/- 4 compared with 108 +/- 3 micrograms/dL, p less than 0.025; 2-hour plasma zinc peak, 159 +/- 8 compared with 228 +/- 17 micrograms/dL, p less than 0.025; and area under the curve, 193 +/- 41 compared with 316 +/- 39 micrograms h/dL, p less than 0.025). **Ferrous sulfate** (300 mg orally), when administered along with zinc sulfate, decreased the area under the curve significantly (in patients by 28%, in controls by 40%) in comparison with the results obtained when zinc sulfate was given alone. When 30 mL of aluminum hydroxide was administered orally with zinc sulfate, the area under the curve decreased by 60% in controls and 75% in patients (p less than 0.005). These results confirm the presence of diminished zinc absorption in patients with renal failure and show that **ferrous sulfate** and aluminum hydroxide, which worsen this defect, also impair zinc absorption in normal subjects.

L5 ANSWER 52 OF 55 MEDLINE
AN 84219488 MEDLINE
DN 84219488 PubMed ID: 6610116

[redacted] [redacted]

TI Iron absorption and utilization in maintenance **hemodialysis** patients: oral and intravenous routes.
AU Magana L; Dhar S K; Smith E C; Martinez C
SO MOUNT SINAI JOURNAL OF MEDICINE, (1984 Apr) 51 (2) 180-3.
Journal code: 0241032. ISSN: 0027-2507.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198407
ED Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19840720

L5 ANSWER 53 OF 55 MEDLINE
AN 84117651 MEDLINE
DN 84117651 PubMed ID: 6664421
TI [Bicarbonate **hemodialysis**. Pharmaceutical aspects].
L'**hemodialyse** au bicarbonate. Aspects pharmaceutiques.
AU Hamon M; Renaux C; Pradeau D
SO NEPHROLOGIE, (1983) 4 (4-5) 174-7.
Journal code: 8011169. ISSN: 0250-4960.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA French
FS Priority Journals
EM 198403
ED Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840307
AB Specific problems during fabrication of concentrated **hemodialysis** solutions containing bicarbonate arise because of the low solubility of sodium bicarbonate in water and the risk or precipitation of calcium, magnesium carbonates. These problems have been solved by the Pharmacie centrale by making 2 different concentrated solutions, the first one brinding the major essential elements, at the exclusion of bicarbonate, the second less concentrated, with bicarbonate and potassium **gluconate**, the latter complexing **iron** and so preventing precipitates of ferric carbonate. The various pharmaceutical steps are described in this paper: formulation, choice of raw materials and manufacturing processes, quality control.

L5 ANSWER 54 OF 55 MEDLINE
AN 82198834 MEDLINE
DN 82198834 PubMed ID: 7342203
TI [Serum ferritin in **hemodialysis**. I. Study in populations treated with iron or untreated].
Ferritina serica en hemodialisis. I: Estudio en poblaciones tratadas y no tratadas con hierro.
AU Marco Franco J E; Alarcon Zurita A; Morey Molina A; Piza Bunola C; Bestard Palmer J; Mairata Bosch S; Galmes Llodra A; Dalmau Diana M
SO REVISTA CLINICA ESPANOLA, (1981 Dec 31) 163 (6) 403-6.
Journal code: 8608576. ISSN: 0014-2565.
CY Spain
DT Journal; Article; (JOURNAL ARTICLE)
LA Spanish
FS Priority Journals
EM 198207
ED Entered STN: 19900317

[redacted] [redacted]

Last Updated on STN: 19970203
Entered Medline: 19820719

L5 ANSWER 55 OF 55 MEDLINE
AN 79244891 MEDLINE
DN 79244891 PubMed ID: 471141
TI Therapy of iron deficiency anemia in patients on maintenance **dialysis**.
AU Parker P A; Izard M W; Maher J F
SO NEPHRON, (1979) 23 (4) 181-6.
Journal code: 0331777. ISSN: 0028-2766.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197910
ED Entered STN: 19900315
Last Updated on STN: 19970203
Entered Medline: 19791017
AB A controlled, prospective study compared the effectiveness of oral **ferrous sulfate** to intravenous **iron** dextran, each with and without concurrent intramuscular androgen for therapy of iron deficiency anemia in patients with chronic renal failure treated with maintenance **hemodialysis**. During the 12-week period of therapy, the patients who received oral **ferrous sulfate** and androgens showed an increment in their mean hematocrit of 16.3% and those who received oral **ferrous sulfate** alone had an increase of 8.3%. Patients treated with intravenous iron dextran androgens showed an increment in their mean hematocrit of 9.4% and those given iron dextran alone showed an increase of 3.5%. Serum ferritin levels increased with iron repletion but correlated inversely with the erythropoietic response. The serum ferritin assay provides a simple and reliable method to demonstrate **iron** repletion, and oral **ferrous sulfate** is the preferred method of **iron** repletion in compliant patients.

AN 80034768 MEDLINE
DN 80034768 PubMed ID: 756029
TI Use of **iron**-dextran to replace **iron** losses in chronic **hemodialysis** patients.
AU Hendler E D; Solomon L
SO PROCEEDINGS OF THE CLINICAL DIALYSIS AND TRANSPLANT FORUM, **(1978 Nov 18-20)** 8 108-12.
Journal code: PSZ; 0432324. ISSN: 0094-6044.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197912
ED Entered STN: 19900315
Last Updated on STN: 19970203
Entered Medline: 19791220

L10 ANSWER 436 OF 535 MEDLINE
AN 70033988 MEDLINE
DN 70033988 PubMed ID: 5351519
TI **Iron** transfer from **dialysate** to patient during chronic **dialysis**.
AU Gral T; Lederer M; Gerszi K E; Rubini M E
SO NEPHRON, **(1969)** 6 (4) 537-41.
Journal code: NW8; 0331777. ISSN: 0028-2766.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197001
ED Entered STN: 19900101
Last Updated on STN: 19970203
Entered Medline: 19700102

AN 70113694 MEDLINE
DN 70113694 PubMed ID: 5371037
TI Total dose **iron** therapy using **iron**-dextran by **intraperitoneal** route.
AU Mehta B C; Patel J C
SO INDIAN JOURNAL OF MEDICAL SCIENCES, **(1969 Nov)** 23 (11) 587-93.
Journal code: GJP; 0373023. ISSN: 0019-5359.
CY India
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197004
ED Entered STN: 19900101
Last Updated on STN: 19900101
Entered Medline: 19700402

AN 76201043 MEDLINE
DN 76201043 PubMed ID: 4470628
TI Proceedings: The investigation of the fate of imferon (**iron**-dextran) following **intra-peritoneal** administration to **iron**-deficient children in Zambia.
AU Elaguppillai V
SO WEST AFRICAN JOURNAL OF PHARMACOLOGY AND DRUG RESEARCH, **(1974 Dec)** 2 (1) 108P-109P.
Journal code: XN2; 0427176. ISSN: 0303-691X.
CY Nigeria
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197608
ED Entered STN: 19900313
Last Updated on STN: 19900313
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